This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

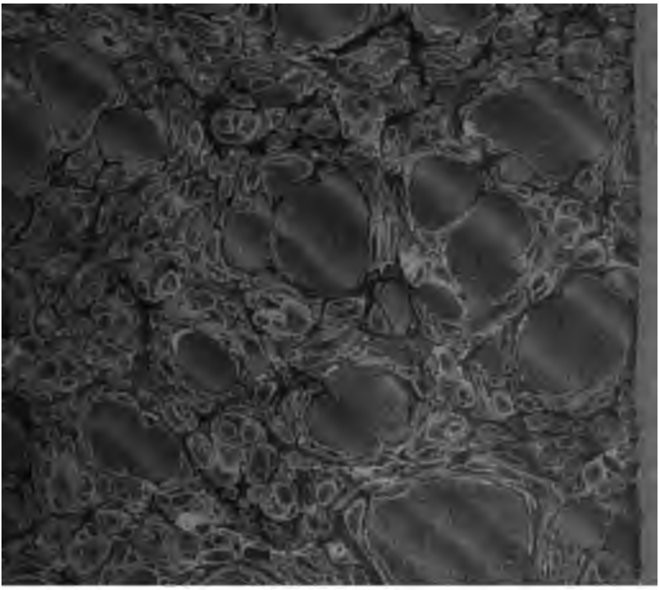
+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

Thos. Taylor
Bocking



b

160 f. 148

CR. N 80

Maurice Mason.
to
His friend
William Marsthorp
June 1829.

A

MANUAL OF SURGERY,

FOUNDED UPON THE

PRINCIPLES AND PRACTICE

LATELY TAUGHT

BY

SIR ASTLEY COOPER, BART. F.R.S.

SERGEANT-SURGEON TO THE KING,
CONSULTING SURGEON TO GUY'S HOSPITAL;

AND

JOSEPH HENRY GREEN, ESQ. F.R.S.

PROFESSOR OF ANATOMY TO THE ROYAL ACADEMY,
SURGEON TO, AND LECTURER ON SURGERY,
ST. THOMAS'S HOSPITAL.

THE THIRD EDITION,
CONSIDERABLY ENLARGED, CONTAINING MANY ADDITIONAL NOTES FROM
THE WRITINGS OF OTHER DISTINGUISHED SURGEONS.

EDITED BY

THOMAS CASTLE, F.L.S.

OF QUEEN'S COLLEGE, OXFORD;
PROFESSOR OF MATERIA MEDICA TO THE ECLECTIC SOCIETY;
ETC. ETC.

London:
PRINTED FOR E. COX, ST. THOMAS'S STREET, SOUTHWARK.

MDCCCXXXI.

D. W.

BODLEIAN
29 MAY 1947
LIBRARY

METCALFE, PRINTER,
ERS' HALL COURT, POULTRY.

TO

SIR ASTLEY COOPER, BART. F.R.S.
SERGEANT-SURGEON TO THE KING,
CONSULTING SURGEON TO GUY'S HOSPITAL;

AND

JOSEPH HENRY GREEN, ESQ. F.R.S.
PROFESSOR OF ANATOMY TO THE ROYAL ACADEMY; SURGEON TO,
AND LECTURER ON SURGERY, ST. THOMAS'S HOSPITAL;

THE PRESENT VOLUME OF SURGICAL NOTES,

CHIEFLY SELECTED FROM THEIR LECTURES,

FOR THE USE OF STUDENTS,

IS, BY PERMISSION,

MOST RESPECTFULLY INSCRIBED,

IN PARTIAL TESTIMONY OF THE VALUE OF

THEIR INSTRUCTIONS;

AND WITH THE EARNEST HOPE IT WILL PROVE A
CONVENIENT AND USEFUL

COMPANION TO THE WARDS;

AND ALSO

ASSIST IN THE FURTHER DISSEMINATION OF

PRACTICAL INFORMATION.

EDITOR'S PREFACE.

A very prominent object in the publication of all works, should be, to convey as much useful matter in as concise and convenient a volume as the peculiar nature of the subject will allow.

Almost every department of the study of medicine has been presented to the student, both in the elaborate and more restricted form; the first with a view of furnishing every known circumstance connected with the science; and the second to be the more immediate guide and companion to his studies.

In acquiring a knowledge of the theory and practice of surgery, extensive reading is not only beneficial, but absolutely necessary, before we can practise with success, or understand the true intention and application of our remedies; yet for the mere beginner to commence his studies by plodding through volume after volume, forgetting as he must, in the multiplicity of description, the very facts he is anxious to acquire, is not only overloading the understanding ere it can form a judgment for itself, but it is a sad loss of time, and a *great source of* perplexity and confusion.

While the mind is young in knowledge, let us remember its powers of comprehension are but weak; and since the study of the medical profession generally, includes such a variety of subjects alike extensive and alike wrapt in the mysteries of doubt, rather should we first be taught the ruling principles, and then, when we have derived a perfect knowledge of the outlines, we may safely venture to drink deeper of the science, and be better prepared to meet the baffling sentiments so universally presented in all medical and surgical works.

Although we have advanced thus much upon the part of reading, it is well known that neither the principles nor practice of surgery can be sufficiently impressed upon the mind by that alone; there must be something far more illustrative to make a scientific and skilful surgeon; he must not only read, but he must compare at the bedside of the patient, that which he reads, with the peculiar character of attending circumstances. This, and this alone, will make him an accurate observer of nature; he will then be able to judge the value of existing opinions, and not until then can he enter on the stage of his professional life, prepared to perform the various duties of his station.

Most students in the country have not the opportunity of pursuing such a course with much advantage, but when they arrive at the metropolitan schools, every facility is offered, and it only rests with themselves to make a necessary proficiency.

The grand source and support of surgical knowledge, must ever devolve on the noble institutions which humanity has erected in this and other cities of distinction; for without these, the collateral rays which emanate from private practice, would never have raised the dignity of surgery to the rank it now holds in the opinion of the world. Here we have at one and the same time, an assemblage of the diseases and accidents to which mortality is heir, and, attached to every institution, a school of instruction for the young and inexperienced, where they may learn to avoid the superstition and empiricism of our ancestors, and be taught to exercise their profession with honor to themselves, and with benefit to the public.

Although the usual means of cultivating sound surgical knowledge are generally given in these institutions, yet there remains, in my humble opinion, one point in which their utility might be more constantly secured to the pupil. The mere walking from one ward to another, and taking a cursory view of every patient, is not a proper plan to be pursued; they should take with them a pocket companion, and when they meet with any particular case, they should first make their own observations, and then immediately refer to know what they have overlooked, or what is unusual to its general character. In this way, they would readily acquire accuracy of observation, and soon become tolerable masters of each subject.

Notwithstanding the surgical press teems with works of every description, I do not know that there is one which will answer the double indication of furnishing the pupil with a general outline of the science, and, at the same time, is sufficiently portable to admit of no material personal incumbrance as a companion to the wards. It is under such an impression that I am endeavouring, in the publication of this volume, to supply that deficiency, and as the opinions herein contained, were for many years delivered at a public hospital,* and have been occasionally published † to the world, the reader must not expect any thing novel, save the manner of re-communication. The lectures from which I have made my extracts, I was led to select, because they are the result of extensive practice, and the instructions of observing surgeons; the one highly courted for his skill and universal reputation, the other equally admired for his general knowledge and professional acquirements.

The lectures of Sir Astley Cooper, I would further add, are the result of forty years experience in St. Thomas's and Guy's Hospitals, and in a large scene of private practice.

The only ground on which I was induced to become Editor of this Manual of Surgery, was the full assurance of the utility and necessity of such a work; and as the learned lecturers have individually and connectedly, given me an honorable permission to re-publish their surgical sentiments, I cannot be considered trespassing on literary property. If a free grant had not been conferred on the part of the respected gentlemen in question, I would not, on any account, have undertaken the work; but as they have in this, as in every other professional capacity, proved themselves disinterested well wishers of surgery, I have availed myself of their generosity, and seek no other remuneration than their approbation, and the satisfaction of benefitting the student.

---

* *St.* Thomas's Hospital, Borough.

† Lancet, &c.

Throughout the whole treatise, I have aimed at brevity and clearness of communication, and, wherever it was possible, I have inserted the usual expressions of each lecturer; but thinking that short sentences are best adapted for convenient reference, I have treated each subject in the form of paragraphs with appropriate or occasional notes, and so arranged the peculiarity of type in printing, as to give the whole a marked and impressive appearance; not, however, but that one part is as much entitled to minute attention as another.

In the present edition, I have endeavoured to remove such points as were objectionable, and to make more perfect other passages, which may have been considered wanting in progressive development. I have also introduced considerable additional matter, selected from the most popular surgical writings, and more particularly from the truly practical "Dictionary of Surgery," by Samuel Cooper, Esq., a work abounding in interest and utility, and one which every student should use, not only as a book for general reference, but as a valuable compendium of all surgical subjects.

My sole object in the execution of my task, has been directed towards the convenience and advantage of the student, but if he unhappily considers his inquiries have gone sufficiently far, when he understands the contents of the volume in hand, he labours under a very serious and dangerous error; the work is only presented to him to refresh or direct his memory, and not to complete the grand structure of his surgical understanding: surgery is a science too extensive to be condensed in so small a compass; it is only possible to give leading points, and he must naturally look to other sources, before he can conscientiously enter into practice.

Although I am desirous in the present undertaking, of alleviating the steps to a general knowledge of surgery, let it not be imagined, for one moment, that I am wishing to save the necessary toil and perseverance of greater devotion to the subject, and thereby encouraging idleness in the rising profession; for, on the contrary, I have pointed out the value of extensive reading, and would have this effort of assistance considered only as intended for their convenience, and as an additional means of ensuring them practical information. It is their duty to recollect that they are hereafter to hold responsible situations in life, and if they neglect to embrace every opportunity of instruction, they will probably be *called upon to* equalize the consequences, by a painful reflection their incompetency to meet the claims upon their public cha- :ter. I would therefore recommend them earnestly to give eir sole time and attention to the true design of their Hospital lucation, to search indefatigably after science, and however fficult or unbounded the prospect may appear before them, they ve only to pursue one even path with patient industry, and they ill never fail to secure an honorable passport to the ultimate dvantages of their professional studies.

T. CASTLE.

January 1st, 1831,
88, *Bermondsey Square.*

MANUAL OF SURGERY.

PART I.

CONTAINING PRACTICAL NOTES CHIEFLY SELECTED FROM
A SERIES OF LECTURES

DELIVERED BY

SIR ASTLEY COOPER, BART., F.R.S.

SERGEANT-SURGEON TO THE KING,
CONSULTING SURGEON TO GUY'S HOSPITAL,
&c. &c.

MANUAL OF SURGERY.

INTRODUCTION.

1. Surgery is that part of the medical science, which relates the performance of operations for the removal of diseased rts; and which also shows the use of medicine in cases of local sease, produced by constitutional derangement, or *vice versa.*

It would be a very difficult task to define the exact limits of surgery and ysic. With accidents, tumours, and many other affections of the body, re can be no hesitation as to which province they exclusively belong; but th regard to erysipelas and a few more, it is almost a matter of personal inion.

2. Surgery is usually divided into the *principles* and *practice.*

3. The *principles of surgery* are learned from observations the living, when diseased; by dissection of the dead; and by periments upon living animals.

ur deductions from these sources, furnish us with the means of knowing a lady by its symptoms, the alteration of structure in a part which had been eased, and the various ways which nature attempts the reparative process, h in external and internal parts.

l. In the *practice of surgery,* many essential qualities are uisite on the part of the surgeon; as neatness in applying his nedies, gentleness *of manner,* and self-possession.

The quality of self-possession is of the highest importance in surgical operations, for the head must always direct the hand, otherwise the operator is unfit to discover an effectual remedy for the sudden and unforeseen accidents which may occur in his practice.

5. A thorough knowledge of anatomy is absolutely necessary; it not only firmly impresses on our memory the situation, form, and structure of the different organs of the body; it also teaches us how to discriminate disease, and to detect the nature of injuries with more certainty. Morbid anatomy in particular should be attended to.

A man who has seen much of morbid preparations, possesses great advantages; but his anatomical knowledge cannot be perfect unless he has seen and assisted in the dissection of the healthy body. In surgical science, hypothesis should be entirely discarded, and sound theory, derived from actual observation and experience, alone encouraged. Observation is a polar star,—hypothesis an ignis fatuus.

6. Physiological knowledge is of the utmost importance to the profession of surgery. This will give you a clear idea of the healthy functions, and thus enable you better to understand the nature of diseased action.

7. The study of medicine is important to the surgeon; he should be able to prescribe with judgment; should well understand the great influence of local disease on the constitution, as well as the origin of local disorders from constitutional derangement.

Without such knowledge, a surgeon knows but half his duty, for there are many cases which require a strict medical treatment, and unless the medicines are judiciously administered, the disease will be aggravated rathe than relieved.

8. Reading and application to your studies will also prove considerable auxiliaries in rendering you well-informed and skilfu *surgeons.*

You should read select works on particular diseases; but I would not recommend to young students those which lay down *systems* for their guidance.

9. The expenses of your professional education, and the expectations of the public, call upon you to search for true knowledge, that you may, thereby, fulfil your duty toward them, shed honor on the medical profession, and finally, after the necessary toils of life, retire into the bosom of your family honored and respected.

IRRITATION.

1. All the actions of the body are excited and sustained by internal and external impressions, which are called *stimulants.*

These stimulants may be either *natural* to the human frame, as blood to the blood-vessels, bile to the intestines, and so on; or they may be *foreign*, as medicines and extraneous bodies.

2. Between all the different parts of the human frame, there exist intimate relations, which correspond with each other, and carry on a reciprocal intercourse of actions. The beautiful harmony produced by these concurrent phenomena, is called *sympathy.*

Thus impressions not only produce effects on the part to which they are directly applied, but in consequence of the freedom of communication between the nervous system, parts of the body at a distance from those in which the original mischief exists, become affected by it.

3. Sympathy may exist *naturally*, as the communication which there is between the uterus and breast; or it may be *the result* of injury and disease.

4. When sympathetic action is the result of injury and dis-

ease, it becomes the cause of restoration on the one hand, or of destruction on the other.

5. I should therefore say, *irritation* is an altered action excited in the system, by an unnatural impression.

Thus sympathetic pain is experienced in the knee and foot from diseased hip, and at the extremity of the penis when there is stone in the bladder; the passage of an urinary calculus through the ureter, occasions retraction of the testicles and pain in the thigh; disease of the prostate causes pain on the inside of one, or both thighs; disease of the liver occasions pain in the shoulder; a diseased testicle, pain in the loins; and irritation of the intestines, an itching of the nose.

6. The sympathetic effects which we have just mentioned, do not consist of morbid actions in the parts thus affected, but of disordered sensations. Nevertheless, morbid actions are sometimes excited in parts near to, or at a distance from those originally affected.

Inflammation of the testicle is frequently the consequence of irritation in the urethra; and swelling of the breast, of a morbid action of the uterus; but there is no organ so much affected by irritation or sympathetic influence as the stomach, for an obtuse pain in any part of the body will occasion sickness.

7. The subject of irritation, consequently, is a very important part of your surgical studies; it is in fact, the chief foundation upon which your practice must be established; for being, as we have before said, the cause of *restoration* on the one hand, or of *destruction* on the other, unless you well understand its great local and constitutional influence, you will be ignorant of the most valuable and unerring guide you can possess.

The art of surgery, it must be remembered, is exercised on a peculiar class of maladies. The diseases which professedly belong to it, are more or less the result of disordered actions; accidents are for the most part relieved by attending only to a moderation or restoration of the sympathetic functions, and of the secretions; and the success of operations, is also depending on the *same principle.*

Irritation, then, is an excited action, necessary, in a certain :, for the restoration of injuries; but when too violent or iorbid nature, occasioning disease and even destruction of irt.

first part of the paragraph shews, that nothing can be more erroneous :tice, than to bleed or purge immediately after an injury or an opera- ecause the skin is hot, pulse quick, and tongue white; for such a state ssary to restoration: it is only when action is in dangerous excess, ch remedies are to be resorted to.

Irritation is generally communicated through the medium : nerves, of which, there are two grand divisions in the body. irst composed of the brain, spinal marrow, and their nerves, ı naturally convey sensation and volition; the second, con- g of the grand sympathetic nerve, the centre of which is d the stomach, in the semilunar ganglion and solar plexus.

modes of sympathetic communication are various, and with difficulty ble to any specific law. In some instances, the course of irritation is he irritated part to the sentient extremity of the nerve, as the pain enced in the knee and foot from a disease in the hip. In other cases, urse of sympathy is from the affected part to the origin of the nerve, as n in the loins consequent on diseased testicles. Irritation on the ı of the grand sympathetic, is communicated to the stomach, probably ;h the medium of the semilunar ganglion; and to the heart, through the ıc nerves.

. *Kinds:*—Irritation may be of two kinds, *local* and *con- tional;* local, when it affects only particular parts, as with an :ss from a decayed tooth; and constitutional, when irrita- fever is produced by local injury or disease.

ı of the greatest importance, to ascertain the cause of disordered sym- tic actions, as the removal of the complaint will depend on this circum- :. If the cause be undiscovered, the effects are likely to continue in of every treatment you may pursue.

. The *constitutional or general* effects of irritation, are not only produced by severe injury, but they are also sometimes excited by the most trivial circumstances.

A person, on having a bougie passed into the urethra, for the first time, feels faint, becomes sick, looks pale, and unless you prevent it, will fall to the ground. On placing him in the recumbent posture, he soon recovers his senses; but constitutional irritation frequently comes on, for a short time, in the evening.

12. The symptoms of constitutional irritation following severe injuries, are attended with considerable derangement, the heart, brain, stomach, and other organs participating in the affection.

A person receives an injury of the leg, producing compound fracture of one or both bones; constitutional irritation commences, generally, in twenty-four hours; the patient complains of pain in his loins, extending up the spinal chord, and pain in the head. He then becomes restless, and his countenance anxious; the tongue at first is dry and covered with a whitish fur, but as the symptoms increase, it becomes yellow, and lastly, coated with a thick brown fur. There is loss of appetite, the stomach becomes irritable, and nausea and vomiting supervene; the secretions are diminished and the stools white. As the severity of the complaint increases, the pulse becomes quick, hard, irregular, and alternately intermittent. The respiration is hurried, intellects deranged, all impressions on the senses are painful, subsultus tendinum, hiccoughs, vomiting, and tension of the abdomen come on, the patient sinks into a low muttering delirium, and soon expires.

13. From these symptoms we may perceive, that immediately upon the receipt of an injury, the usual balance of healthy functions is destroyed, nature becomes alarmed, and directly sets about repairing the damaged parts, by what is termed the restorative process.

Accordingly, we find that a strong impression is made on the nervous system; all the secretions are stopped or diminished, to supply the injured part with an increased power to secure its restoration. The various outlets being closed, the blood collects in larger quantities in the heart, and great blood-vessels; from thence it is propelled with increased force to the wounded part, and gives rise to some form of inflammation, which either terminates in *a cure of the injury,* or runs on to a destruction of the member or of life.

4. The degree of constitutional irritation, resulting from ry, depends on several causes; these are, the importance of parts injured; the extent and nature of the injury; the state onstitution, age, and previous habits of the patient.

itation is greatest in children, and least in aged persons; the former ery much affected by operations, whilst the latter are very slightly so.

. *Treatment*:—The treatment of irritation is very similar iat required for inflammation.

i. When constitutional irritation arises from a local cause, remedies must be chiefly directed to the removal of that cause, lessen its effects on the constitution; but, on the contrary, n local disease is either promoted or aggravated by constitual derangement, then your treatment must be directed to the rder of the system, and as that improves, so will the local tion disappear.

astitutional irritation must not be too suddenly subdued nor destroyed, certain degree of irritation shows, that nature is endeavouring to aclish the restorative process: keep it within bounds, carefully watch its ress, and if necessary, check its violence, but do not entirely destroy it.

7. There are two means of reducing irritation:—the *first*, restoring to the different organs their various secretions, by ch the outlets become opened and fever lessened;—and the *nd*, by allaying the excitement of the nervous system.

e first indication may be fulfilled by producing a determination to the , and the administration of aperients; but when the irritation is very re indeed, you should give mercurials to act on the liver, saline aperients he intestines and kidneys, and antimonials on the skin. The second cation is answered by giving opium and antimony combined, or calomel, mony, and opium, to act on the skin and liver, as well as on the nervous em.

8. In cases *of irritation, bleeding* must be resorted to with

care, for if it be carried to a great extent, the powers of the constitution will be unequal to the reparation of the injury.

19. Where there is chronic irritation, the best treatment you can adopt, is to give steadily, those medicines which have the greatest chance of overcoming the complaint.

My favorite medicine is the oxy-muriate of mercury combined with rhubarb, bark, or sarsaparilla; Plummer's pill is also a very fair remedy; as also, the blue pill at night, with saline aperients in the morning.

INFLAMMATION.

1. Inflammation is the process by which local injuries are repaired, and it may therefore be considered as the restorative principle.

By inflammation, however, is generally understood, the state of a part, in which it is painful, hotter, redder, and somewhat more turgid, than it naturally is; which symptoms, when present in any considerable degree, or when they affect very sensible parts, are attended with fever, or a general disturbance of the system.

2. There are four signs that commonly attend it; viz. ***redness, pain, increased heat,*** and ***swelling.***

3. ***Redness:***—Arises from an increase of the red particles of blood in the part.

More blood must necessarily be contained there, because the vessels, which previously conveyed the fluid, are preternaturally distended, and the small vessels, which naturally contained only lymph, are now so enlarged as to be capable of receiving red blood.

4. ***Pain:***—Increased sensibility or pain, is owing to disten-

tion of the nerves, by the greater quantity of blood determined to them.

Parts naturally little sensible, are quite the reverse when in a state of inflammation. Bones, though nearly destitute of sensation in their healthy state, are sometimes extremely sensitive when inflamed.

5. *Increased Heat:*—This is not yet generally allowed to exist.

Though no increase of heat is manifested in internal inflammation, yet when it occurs on the surface of the body, an alteration sometimes, of several degrees, takes place. It is said never to exceed the heat of the blood at the heart. This in health is usually about 100° Fahr.; but sometimes in disease it rises to 160° or even 170°.

6. *Swelling:*—Is owing in a measure to an increased determination of blood to the part, and also depends on effusion of the fibrin of the blood, which in coagulating, deposits serum in the surrounding cellular tissue.

That the extravasation of coagulating lymph has a remarkable share in producing the swelling of inflamed parts is unquestionable; for it fills up all their interstices, glues their whole structure together, and consolidates them into one mass. Frequently, when its quantity is considerable, it is converted into a true cellular, or membranous texture, or assumes more or less, the peculiar qualities of different organs. This is very evident in the bones. By means of such change, also, several loose parts may acquire the external properties of denser organs. Thus, the lungs are sometimes turned into a liver-like substance, and hence called *hepatized*.

7. *Kinds:*—Inflammation may be either *acute* or *chronic.*

8. *Acute Inflammation:*—Acute inflammation usually goes through its various stages with great rapidity.

The adhesive stage is marked by hardness and pain; the suppurative, by irritative fever, fluctuation, and throbbing or pulsation; ulceration usually succeeds in a short space of time, and the matter is discharged.

9. *Chronic Inflammation:*—Chronic inflammation is exceedingly slow in its progress, and is either the result of acute inflam-

mation, or owing to a peculiar state of constitution, occurring in persons who have lived intemperately, or who have been depressed by laborious exertions and disappointments.

An instance of chronic inflammation succeeding the acute, may be seen in gonorrhœa. During the first stages of this complaint, we are obliged to check the action of the vessels of the urethra, but afterwards to excite it, by the balsam of copaiba, and slightly stimulating injections.

10. Inflammation may also be either *common* or *specific.*

11. *Common Inflammation:*—Common or healthy inflammation is the kind we look to for the reparation of an injured part.

Shortly after an injury, if inflammation of this character is set up, adhesive matter is thrown out upon the edges of the wound, by which they become perfectly united.

12. *Specific Inflammation:*—In specific or unhealthy inflammation, the vessels have an entirely different action to what happens in the healthy, and thus the fluids and solids which they secrete have a decidedly opposite character.

There are two descriptions of specific inflammation: the first is produced by a peculiar condition of the constitution, as in the formation of scirrhus, scrofula, gout, &c. and the second, by the application of a poison, as in syphilis, &c.

The best example of the first kind, is scrofula. Persons attacked by this disease, have generally light hair, fair complexion, and a delicate appearance: when inflammation occurs, it is slow in its progress, although easily excited; and at last, ulceration taking place, the discharge consists of curdy matter, or a thin serous fluid, not at all resembling the pus which is formed in healthy inflammation.

Gonorrhœa, variola, &c. are good illustrations of the second kind of specific inflammation. Thus, in gonorrhœa, the matter secreted is widely different from common healthy matter, having in the first place, a much larger quantity of mucus mixed with it; and, secondly, when applied to a secreting surface, is capable of exciting in the part, an action by which similar matter and the same effects can be produced. The matter of small-pox occasions the same result, and as far as constitutional effects are concerned, it does not seem material how large or how small a quantity of the poison is applied, the *result in each case* depending upon the state of the constitution.

3. *Irritable Inflammation:*—In addition to the kinds of ammation already mentioned, there is another, which I proe to call the ***irritable.*** In this kind, the nerves are more cted than the blood-vessels; consequently the parts labouring er its influence, are exceedingly tender to the touch.

he eyes, the breasts of young women, the bladder, and the testicles ery disposed to this species of inflammation.

4. ***Causes:***—The true ***proximate*** causes of inflammation, ear to be an increase of action in the vessels of the part, and ncrease in the size of the vessels themselves.

ith regard to the proximate cause, there has been a great difference of ion. Galen considered phlegmon to be produced by a superabundance e sanguineous humour. Boerhaave referred the proximate cause to an uction in the small vessels, occasioned by a lentor of the blood. Cullen others attributed it rather to an affection of the vessels than a change of luids. The question, however, is by no means satisfactorily explained.

5. *Exciting:*—The exciting causes of inflammation are whatproduces an unnatural state of the parts, calling upon nature its reparation, which she effects by the process of inflamma-, as bruises, pressure, extraneous substances, &c.

echanical or chemical irritation, changes of temperature, and stimulating s are also exciting causes. Fever often seems to be a remote cause, the mmation thus produced is generally considered as critical. Spontaneous mmation sometimes occurs when no perceptible cause can be assigned ts production.

6. Inflammation sometimes arises from debility, as is frently seen in the extremities of old persons, in whom the blood rns to the heart with difficulty.

m the weakened power in elderly persons, the arteries are called upon for al exertion, and inflammation of the skin succeeds, frequently attended incrustations, and sometimes with a watery secretion into the cellular e. *In these cases, bleeding must be* resorted to with caution.

17. Irritable persons are much more predisposed to inflammation than others, and when it occurs in them, it is of a more dangerous nature than in those who are not irritable.

Thus in fevers, when the constitution has been much weakened, the parts on which the body has been resting become inflamed, and quickly mortify. But in fractures, where the system is healthy and strong, although the patient remain many weeks in bed, no such effects are produced.

18. *Treatment:*—The treatment is either constitutional, local, or both combined.

19. *Constitutional Treatment:*—When any important organ is injured, or its functions disturbed in consequence of the influence of an injury on the constitution, the treatment must be invariably constitutional.

In persons of irritable habit, constitutional treatment is necessary, whether any important part is injured or not; for in these cases, very trivial local damage will speedily affect the entire system.

20. The most powerful remedy for relieving inflammation, is the abstraction of blood : its beneficial effects principally result from producing a diminution of nervous power, or syncope ;—secondly, by lessening the quantity of blood ;—and lastly, by facilitating the re-establishment of the secreting functions.

A hard, wiry, and quick pulse indicates blood-letting; but quickness of pulse is not in itself a sufficient proof that bleeding is requisite; but when *united with hardness*, no additional evidence of its necessity can be wanted. The pulse, however, is not always hard when inflammation attacks important parts, for when the stomach or intestines are thus affected, the pulse is scarcely perceptible.

21. The indication for a repetition of blood-letting, is said to be a buffy state of the blood; but your decision must not be governed by this appearance, you must still have a hard pulse.

When blood is cupped, it is said to be a proof of strength, and that bleeding should be repeated; but experiments have shown that even a cupped state of the blood, and buffiness conjoined, are not sufficient evidence to warrant the repetition of blood-letting.

22. The quantity of blood which should be drawn, must depend entirely on the severity of the complaint.

As the grand object of bleeding in inflammation, is to produce syncope, the blood should be abstracted rapidly; therefore, the orifice made into the vessel should be of considerable size; for if it be allowed to run slowly, the vessels have time to accommodate themselves to the diminished volume of circulating fluid; so that the system scarcely receives any shock when blood is abstracted in this gradual manner. The grand object is always to produce fainting.

23. When you have accidents brought to you, which will require a long time for their recovery, you must be exceedingly careful how you take away blood from the general system, but must adopt, in these cases, local depletion.

There are some cases of inflammation, where bleeding will not afford relief: this more frequently happens in inflammation of the testicle than in any other part. For these affections you must administer the compound powder of ipecacuanha, combined with calomel.

24. The second mode of relieving inflammation, is by restoring the secretions.

The most important secretions, are those of the liver, intestines, skin, and kidneys; and when these cease to perform their proper functions, from a shock on the nervous system, irritative fever is the consequence.

25. As it is necessary in inflammation, not only to act upon the intestines, but also to stimulate the liver, the best plan is to give calomel at night, and a saline aperient in the morning.

An excellent aperient for adults is one grain of calomel, with four of cathartic extract; or two of blue pill, with three of cathartic extract; castor oil, may also be recommended; *and as another safe opening medicine, you may prescribe infusion of senna with sulphate* of magnesia. In children, calomel *with rhubarb, scammony, or antimony,* may be ordered as aperients; and in addition to these means, the use of injections, and the warm bath, are the best means of restoring the secretions of the digestive organs.

26. The secretion from the skin, may be produced by giving antimonials with calomel; and that of the kidneys, by the administration of diluents, squills, or acetate of potash.

Extensive inflammation will not be overcome by restoring this or that secretion, for it cannot be effected but by the complete restoration of them all.

27. Provoking a constant nausea in the stomach, is another mode of subduing inflammation.

For this purpose, the solution of tartar emetic should be given in repeated small doses; it will relieve that oppressive dryness of the skin which accompanies the fever attendant on severe local inflammation; diminish the increased action of the heart and arteries in general; tend to restore the secretions; and will be found, more or less, to promote the removal of costiveness.

28. The remedies employed in chronic inflammation, must have a slow and gradual action on the secretions. You cannot take this disease by storm.

Calomel and opium; compound pills of sub-muriate of mercury; oxymuriate of mercury, with the decoction of sarsaparilla; and in children, rhubarb, with the hydrargyrum cum cretâ.

29. From what has been said on the treatment of inflammation, it appears that, by venæsection, we diminish the quantity of circulating fluid, and assisted by the restoration of the secretions, we prevent the heart from propelling a great quantity of blood with violence to any particular part of the body.

30. *Local Treatment:*—Cold applications will relieve, by abstracting heat, by lessening the size of the vessels, and by diminishing the action of the part, through lessening its nervous *irritability.*

A lotion of sp. vini rect. ℥j. with aquæ ℥v. is the best local remedy. Ice is not recommended in the inflammatory stage, it irritates and sometimes produces gangrene. In applying spirits of wine, let your cloth be very thin, that evaporation may freely take place.

31. In contra-use to cold applications, heat and moisture are very valuable, for the two produce relaxation, open the pores, give rise to perspiration, and thereby remove congestion.

Fomentations or poultices are the general forms. Leeches are used with the same view as poultices or fomentations; and also in some cases, puncturing the veins of the part with a lancet.

32. As in the *acute inflammation*, our object is to diminish vascular action; so in the *chronic*, we endeavour to increase it, by the use of stimulants.

Thus in long continued discharges arising from relaxation, we employ stimulating lotions, for the purpose of restoring to the vessels their healthy power of contraction. Again, in sluggish indolent ulcers, it is absolutely necessary to excite action.

33. *Counter-irritation:*—Is a very powerful remedy in inflammation, and its advantages numerous; but the chief benefit arises from its drawing off the blood from the neighbouring inflamed parts, whereby it checks the course of disease in important organs.

Thus a blister at the nape of the neck, if early applied, will arrest an inflammation of the brain, and so on in other parts of the body. Blisters, issues, setons, and ointment of tartarized antimony, are the usual counter-irritants.

34. Counter-irritation, if carried to too great an extent, will aggravate the original disease.

35. Position and rest must be particularly attended to, in the treatment of inflammation.

36. Indurations frequently remain after inflammation has

entirely ceased. These are to be got rid of by diminishing the circulation of the part, and producing absorption.

Pressure with rollers or strapping, electricity, mercury, and friction, are the usual means resorted to.

37. *Effects:*—In inflammation, the vessels of the part are in a dilated state, and the surrounding ones have an increased action.

38. The *local* effects of inflammation, are either *adhesion, suppuration, absorption,* or *gangrene;* the *constitutional* symptoms are similar to those of irritation.

39. Inflammation produces different results in different parts.

40. When seated in *the skin,* it usually becomes extensive, because the surface is unbroken.

Its colour is very florid; it separates the cuticle in the form of vesications, which usually contain serum, but also in some cases, fibrin; a serous effusion is also produced by it into the subjacent cellular tissue; in some instances it is preceded by fever, in others followed by it.

41. In the *cellular membrane,* inflammation produces an effusion which obliterates or fills its cells; if it proceed, it occasions suppuration, and produces an abscess.

42. In debilitated irritable constitutions, inflammation destroys the cellular tissue, and produces *carbuncle;* but if the inflammation is of a chronic nature, it occasions tumours of various kinds, as the steatomatous or adipose; or under peculiar circumstances, those of a malignant nature, as the scirrhous, fungous, &c.

43. Inflammation of *fasciæ* is generally extensive, from the *large surfaces* they present.

When matter is produced by inflammation of this texture, and is seated under it, great irritative fever succeeds until it is discharged, as for example, in the palms of the hands, or soles of the feet.

44. When inflammation attacks *muscles*, it is known by the spasmodic twitchings which attend it.

It is from this cause, in fractures, that patients are restless for the two or three first nights.

45. *Tendons* are not very susceptible of inflammation, but they sometimes become inflamed to a considerable extent.

Punctured wounds of tendons are apt to produce tetanus more than wounds of other parts of the body. Matter formed under tendons, burrows to a great extent, and produces violent irritation.

46. Inflammation in the *absorbent vessels*, is marked by red lines on the skin, in the course of these vessels.

These form hard knots, from the skin participating in the inflammation. Their glands become also inflamed, and both glands and vessels occasionally suppurate. Absorbents more frequently inflame from common irritation than from the absorption of poison.

47. *Arteries* are rarely inflamed, excepting after wounds, or the application of ligatures.

Inflammation of the arteries, is however, sometimes very extensive, even going as far as the heart itself. This I have frequently observed in patients who have died from constitutional irritation, after an operation where a ligature has been made on an artery.

48. *Veins* which are inflamed from wounds, become like hard and broad cords, and extremely tender to the touch.

The process of inflammation in veins, is slower than in the arteries, and when it reaches the valves these generally adhere, and glueing the sides of the vein together, often prevent any further mischief.

49. *Nerves* are very rarely inflamed, but when they are, the

pain is excessive, and there is a tingling sensation in the parts to which the nerve is distributed.

Wounds of nerves, though extremely painful at the moment, are followed by little irritation.

50. *Ligaments*, like tendons, are not very prone to inflammation in healthy constitutions: but the synovial membrane which lines them, is highly so; and the inflammation has a tendency to go on to the suppurative process.

In scrofulous persons, the synovial surface becomes inflamed, and the ligament covering it, thickened, so as to produce great enlargement of the joints.

51. *Cartilages* in joints, ulcerate from inflammation, and often become entirely destroyed.

52. The *bones*, like other parts of the body, are subject to inflammation; and when fractured, it is by this process that their union is effected.

Suppuration, ulceration, and mortification also attack the bones, so that this structure, like all other parts of the body, is subject to the different processes of inflammation.

53. *Serous* membranes, when inflamed, are remarkably disposed to pass into the adhesive inflammation; whilst *mucous* membranes, on the contrary, generally go into the suppurative state.

ADHESIVE INFLAMMATION.

1. Adhesive inflammation is the process by which divided parts become united.

Unless adhesive inflammation take place, not the slightest wound would unite, it is therefore one of the first points of surgery, to endeavour to obtain a *healthy* adhesive inflammation.

2. *Serous* membranes, as we have already remarked, are particularly disposed to *adhesive* inflammation, whereas, *mucous* surfaces, on the other hand, are generally attended with the *suppurative* process; that is, in both cases, if the inflammatory action does not subside without effecting a change in the parts.

This ordination is a most beautiful and wise provision of nature, for if the *serous* membranes of cavities, such as the pleura and peritoneum, instead of the adhesive, were to receive and support the suppurative inflammation, effusion and death would be the inevitable consequences. Again, were the *mucous* membranes of the urethra, intestines, and so on, affected with adhesive inflammation, instead of the suppurative, the outlets of our bodies would be closed, and death certainly follow.

Sometimes, however, where inflammation of a mucous membrane is exceedingly violent, it passes into the adhesive state, glues the parts together, and unless relieved by an operation, would end in the destruction of life.

3. Adhesive inflammation once set up, either as the result of an accident or otherwise, the fibrin of the blood is effused into the cellular membrane, or on the surface of the wound, by which means, a connecting medium is formed, and the parts become permanently united.

Adhesive matter, when effused on a thin membrane, coagulates into a net work, assuming the character of cellular membrane.

4. The length of time which is necessary to transpire before the adhesive inflammation commences, is different according to the structure of the part, and the nature of the constitution.

In the cavity of the abdomen, the intestines will be glued together in nineteen hours, or thereabouts. On the surfaces of wounds, the process of adhesion takes place still more rapidly.

5. When adhesive matter has been formed, blood-vessels soon enter it, and within a short time it becomes organized; the vasa vasorum are elongated by the force of the circulation; they enter the newly-formed substance, and send throughout it minute ramifications.

In cutting into adhesive matter, within twenty-four hours after it has been deposited, small bloody spots may be seen, which mark the future situation of the vessels which nourish it; but it is not till ten days after it has been formed, that adhesive matter becomes completely organized; for you will find that a fine injection would not enter adhesive matter, sooner than the tenth or eleventh day after its formation. When vessels elongate, they have not the character of arteries; in general, they take a serpentine course.

6. The adhesive process is useful in the formation of cysts, in healing wounds, sealing blood-vessels, enclosing pus, and by its dividing cavities into distinct parts, thus fixing a boundary to the suppurative process.

7. The effusion of adhesive matter, by unloading the vessels of the part, has the effect of reducing inflammation, so that the process generally terminates as soon as this effect is produced.

SUPPURATION.

1. Suppuration is one of the terminations of inflammation: it consists in the formation of purulent matter from the secreting orifices of the blood-vessels, which matter is named *pus.*

Pus is formed in cavities, produced in the body by a process of absorption, as in abscesses; it is found also as a secreting fluid, on the surfaces of membranes, or upon granulating surfaces.

2. The formation of matter is often attended with severe constitutional irritation; there are rigors succeeded by heat, and if the inflammation be extensive, or seated in any vital organ, the constitutional disturbance will be very severe, and the shivering, which indicates the formation, will also be severe, and followed by a powerful re-action.

When pus is easily produced, as upon mucous membranes, there is no rigor *whatever.*

3. When there is an attempt to produce matter, there is an unusual sensation of uneasiness in the part, together with a blush on the skin. As this continues, the tumour becomes soft in the middle, but remains hard at the sides; the centre rises, and upon pressure, fluctuation will be evident.

In the adhesive inflammation, the pain is an acute thrilling one; but here it is more dull, and is, likewise, pulsatory or throbbing.

4. The next thing to be observed, after the pointing of the tumour, is an effusion of serum beneath the cuticle, which separating it from the cutis, it becomes gradually distended, and then bursts, leaving the cutis exposed.

Ulceration sometimes takes place on the surface of the skin, whilst the same process is going on internally, so as to facilitate the discharge of the matter; generally speaking, however, the ulcerative process is continued entirely from within.

5. Pus is generally formed, in from seven to fourteen days; but the time required for this process, will very much depend on the constitution of the patient, and the structure of the part in which the inflammation is seated.

6. Some parts more readily run into the adhesive, others into the suppurative inflammation: the pleura, pericardium, peritoneum, &c. are subject to the former; while the urethra, vagina, lachrymal duct, trachea, bronchia, &c. are liable to the latter: serous surfaces, therefore, are affected by the adhesive inflammation, and mucous surfaces by the suppurative.

The vessels of serous membranes are too small to permit the transmission of the particles which pus contains; but when the inflammation becomes excessive or long-continued, then the vessels dilate, and purulent matter is formed, even on serous surfaces.

7. Pus is not a fluid produced by the dissolution of the solids;

it is secreted by the blood-vessels, but not until they have bee acted upon by inflammation.

The effects produced by the application of a blister exemplify this. Whe the cuticle is raised, first serum and fibrin are thrown out; remove the cuticl and apply upon the raw skin a piece of glass; at first, no matter is to be seei but in a few minutes you will observe it collect and adhere to the under sid of the glass. Bile, urine, the tears, and in fact, all the fluids are secrete from the blood, but in each instance the action of the vessels is different.

8. Pus is composed of particles, nearly similar to the blood only differing in colour, swimming in a fluid resembling serum and coagulating as serum does, when exposed to the influence o heat.

Pus, when healthy, is a bland fluid, and will not irritate the parts that produce it; but when it is unhealthy, having mixed with it too large a portio of serum, or when bloody, then it will irritate and occasion excoriation.

Healthy pus appears to be composed of the constituent parts of the blood slightly changed in their character, by inflammation.

9. When pus of a poisonous kind, (the result of specific inflammation,) is applied to the surface of the body, it irritate occasions inflammation and suppuration, and the newly-forme matter is exactly of the same virulence and poisonous nature, a that which produced it.

The discharge of gonorrhœa, chancre, vaccine, and variolous matters, a well-known examples.

10. Suppuration answers two very beneficial ends: the first by forming a convenient covering to granulating surfaces; an the second, by effecting the escape of extraneous bodies.

11. Some wounds are very troublesome,—do what we will we cannot get them to heal.

In these cases, it is advisable to discontinue your dressings, and let thei *surfaces remain exposed* to the air, incrustations or scabs will form; unde these, pus will be secreted, which, by keeping the granulations constantly moist, will often cause ulcers of this kind to heal, when all artificial attempts have been completely unsuccessful.

12. Long accustomed discharges require great caution when healing them; for, if done too suddenly, hectic or apoplectic symptoms are very apt to supervene.

Quantities of matter, constantly discharging for a considerable period, inevitably act on the constitution as sources of depletion; and which, if suddenly discontinued, will naturally produce the symptoms just mentioned.

13. Ancient surgeons, therefore, instituted issues as a counteraction; but purgative medicines will answer much better, and speedily carry from the system, by a natural channel, any increase of its fluids.

14. Suppuration is best promoted by the application of heat and moisture combined.

ULCERATION OR ABSORPTION.

1. Ulceration is the absorption of any part of the body, and the result of previous inflammation.

Inflammation has not only an influence on the arteries; it has also an effect on the absorbent vessels, there is a natural balance between the action of the arteries and the absorbent vessels. In a state of health, and at the adult period of life, the portion of matter deposited by the arteries, and the portion taken into the system by the absorbent vessels, are, as near as possible, balanced. But if any considerable inordinate absorption of some part of the body takes place, that absorption is called *ulceration*.

2. Ulceration, therefore, arises, from an increased action of the *absorbents; and this* generally proceeding from pressure *united with inflammation.*

These vessels are thrown into a state of inordinate action, whenever any c siderable quantity of blood is thrown upon them; whereby the natural bala between the arteries and the absorbents, is destroyed.

3. Ulceration often occurs without being accompanied by a purulent secretion.

Aneurism is a very good proof that pressure is the cause of ulceration, a that ulceration is not necessarily accompanied with the formation of matt

4. Formation of matter more frequently happens on expos surfaces of the body, where it is necessary for the protecti of sores, by covering the granulations.

5. The constitutional symptoms of ulceration, are usua moderate.

In general, a degree of fever attends it; but it is rather of the hectic chronic kind, than sudden or violent in its attack. The pulse is under l and at the same time small; and the pain is of a gnawing dull nature, a insects were about the part.

6. The local symptoms present the appearance of the pa being worm-eaten; the surface is rough and very irregular.

7. Ulceration is sometimes extremely rapid, and extensive destructive: as much will be destroyed in a few hours, as w require weeks and months to repair.

The difficulty of cure, must necessarily be proportional to the extent surface destroyed; something will depend also, on the form of the ulcerati and the kind of surface exposed.

8. The ulcerative process has always a tendency to the neare external surface of the body.

In consequence of this tendency, matter formed at a depth in the body, fi its way through the integuments, instead of proceeding through the m *important* parts.

9. This is a law in part depending on the less vitality and greater irritability of those parts which are nearest the surface of the body. The external parts are more weakly, with respect to circulation, and more readily absorbed.

The external parts are not weakly with regard to the quantity of blood, for they possess a considerable share of vascularity; but they are weakly with respect to the living powers: they are more irritable, and more subject to vicissitudes of action, from corresponding changes of temperature, than other parts of the body; have less strength of circulation, and consequently, give way to ulceration more readily than those parts which are deeper seated, and possess a greater strength of circulation.

10. Parts at a considerable distance from the source of circulation, are generally more disposed to ulcerate, than others situated near to the heart.

This accounts, in a measure, for the greater number of ulcers on the lower extremities, than on the arms.

11. Newly-formed parts of the body, such as cicatrices, callus, and all adventitious new matter, like tumours, are more liable to be absorbed than those which have long existed.

In Lord Anson's voyage, when the crew of his ship began to suffer from great privations, fatigue, scurvy, &c. it was remarked, that such men as had had ulcers and broken bones formerly, became again disabled by their old sores breaking out afresh, and the callus of their old fractures being removed by absorption. When the men got fresh vegetables, &c. on shore, they recovered their health, their bones united, and their sores healed.

12. The irritability of a part is proportional to its weakness; and the parts which are weak and irritable, fall most readily into the ulcerative process.

When a child labours under symptoms of constitutional derangement in cutting a tooth, why do you lance the gum? You cut the gum, not for the purpose of making an immediate passage for the tooth, and procuring immediate relief to the child, but because, when the gum by the adhesive process heals upon the divided part, a *cicatrix* is produced by this little operation, which is very readily absorbed; and the result is, that when the tooth rises the child cuts it with much less pain and irritation than it otherwise woul have done.

13. In those parts which are endued with little vital power ulceration takes place very readily; while in those to which th quantity of blood sent, is very small, ulceration takes place wit difficulty.

This is the case with tendons. Tendinous parts possess very little blood very few arteries or absorbent vessels are distributed to them. Hence th process of absorption goes on with great difficulty, and tendons will slough t a great extent rather than become absorbed.

14. The circumstance of tardy absorption of tendinous structures, must not unfrequently influence our practice.

When there is an abscess under a fascia, an incision should be made a soon as possible through the covering, to liberate the confined matter; s with an abscess of the finger, when the constitution suffers because the theca will not give way to the process of ulceration, and the nervous system becomes irritated by the pressure of confined matter, an early incision should be made to liberate the matter, and give relief to the constitution. The same practice should be pursued in abscess of the palm of the hand.

15. The ulcerative process is useful to the animal economy, in removing extraneous bodies from the system; in the exfoliation of portions of bone, and in separating parts which would otherwise remain in the body for the remainder of life.

Thus a ball lodged in the body, and a ligature round an artery, are disengaged by the ulcerative process.

ABSCESSES.

1. An abscess is a collection of matter in a cyst, produced by inflammation, giving the surrounding parts a tendency to the *ulcerative process*, so as to lead to their absorption.

First, there is an inflammation of the adhesive kind in the cellular tissue, by which the different cells of the cellular membrane become filled with adhesive matter. A slight ulcerative process takes place, the inflammation still proceeding, and a little cavity is formed by the process, a space eing left for the effusion of pus, the result of the second stage of inflamation. A drop of matter is secreted into the cavity, and as soon as it is oured out, the pressure on the side occasions an increase of the ulcerative rocess, which adds to the cavity previously formed. More matter is then roduced, and the surrounding solids, having a tendency to the same rocess, it is accumulated so as to lead to absorption of the neighbouring arts.

2. In the formation of an abscess, matter does not produce bsorption of all the parts around equally.

It excavates chiefly on the side towards the skin, and very little in the pposite direction; therefore has no power of eroding.

3. Abscesses are dangerous according to their size, number, nd situation.

4. In large abscesses, neither the danger or constitutional fects arise from the quantity of matter produced, but from the fficulty which nature has in repairing the devastation made by e excavation of the solids, from the pressure of the matter.

An abscess may discharge a great quantity of matter, and the constitution ay not have scarcely been affected by it; but very soon after it is opened, e constitution begins to suffer. Very large abscesses sometimes terminate vorably, but in a number of cases they destroy life.

5. A great number of small abscesses on the surface of the ody, as in small-pox, frequently terminate fatally.

Here nature performs the suppurative process; the pustules die away, and e cuticle is separated from the surface of the body; but nature has not the ower, in many cases, of repairing the destruction of the cutis; the exposure f the nerves of the skin, occasions great constitutional irritation, and the atient dies as if destroyed by a burn or a scald.

6. Abscesses are also dangerous, from their being situated in vitally important parts, such as the brain, heart, or lungs; and even though not situated in vital parts, they sometimes become dangerous, by their pressing on them.

Abscesses in the perinæum, or between the prostate gland and the rectum, will, by their pressure on the urethra, occasion irritation of that part, and sometimes complete retention.

7. When bones form the boundary of abscesses, they become very long and tedious in their progress, and, in some cases, attended with a considerable share of danger.

Thus it is in psoas abscess: in this disease, the matter begins to collect on the fore part of the vertebræ, and proceeds through the hollow of the psoas muscle till it reaches the groin, where it makes its appearance just below Poupart's ligament; extensive discharge supervenes, and not unfrequently the patient sinks.

8. When abscesses occur between bones and their coverings, exfoliation sometimes takes place to an alarming extent.

9. Abscesses are either *acute* or *chronic*; the former, having a common course of three weeks; the latter, much slower in their progress.

10. With the acute abscess, the adhesive inflammation first begins; this is succeeded by the suppurative; and, lastly, the ulcerative process comes on; and it is generally three weeks from its commencement before matter is discharged.

11. The constitutional treatment of acute abscesses should be directed towards the secretion of the bowels, by sulphate of magnesia; and the nervous system and painful sensations relieved by opium.

The best medicine you can give, is three or four table spoonfuls, three times a day, of a mixture, made with six ounces of the solution of acetate of ammonia, one ounce of sulphate of magnesia, and one drachm of the tincture of opium. By this medicine, you lessen irritation, and promote the suppurative and ulcerative processes.

12. The local treatment, consists in the application of fomentations and poultices, for by promoting heat and moisture, a greater quantity of blood is sent to the part, and a relaxation of the vessels takes place: this expedites the suppurative process, and that being done, the ulcerative process takes place with more ease.

The kind of poultice to be applied, is of little importance; linseed or bread poultices, are perhaps the best. No stimulating application would do.

13. In the suppurative stage prevent evaporation by covering the part with oil-silk; it preserves the heat and moisture, is clean, agreeable to the patient, and most conducive to his comfort.

14. If an acute abscess seems disposed to go through its different stages without any interruption, the best practice is to leave it undisturbed.

15. Acute abscesses, beginning under aponeurotic fasciæ, ought to be opened as early as possible; the earlier the better.

The moment one drop of matter may be felt to fluctuate, it is advisable to make a free opening, both as regards the constitution and the part.

16. Whenever matter can be felt close to bone, it will be right to open it, excepting in cases where it may occur from severe courses of mercury, between the cranium and pericranium.

In those cases where a fluid exists, between the pericranium and bone, *unattended* with any blush, do not open it; it will be removed by purging, and giving bountifully the decoction of sarsaparilla; but when matter is formed, and *there is a blush*, it will not be absorbed; an opening must be made, and *exfoliation will often take place.*

17. As in acute abscesses, we are called upon to diminish the state of excitement in the constitution; so, on the other hand, in *chronic* abscesses, we must do all we can to give the constitution additional powers, by allowing the patient a generous diet, and administering ammonia and bark.

18. Stimulating poultices should be applied to the part, and when the abscesses are of an indolent nature, a stimulating plaster will prove serviceable.

The best poultices for the purpose, are made with yeast and oatmeal, or vinegar and flour, and these wetted with a solution of common salt. The compound galbanum plaster, mercurial plaster with ammoniacum, and soap plaster, are those commonly used; they excite the parts to action, and generally produce a slight local perspiration.

19. When it is necessary to open an abscess, you should do it early, particularly in exposed parts of the body, as the early discharge of matter is the prevention of scars.

Abscesses situated in the neck, or any exposed part, should be opened before the skin is much affected, and before a blush has appeared; thus scars will in general be prevented, and the incision should be made transversely, and not in the axis of the neck. When these tumours have acquired the hue of a grape, the veins are dilated, and they, consequently, should never be opened.

20. In common abscesses a small opening is sufficient, but when the matter is seated beneath a fascia, it should be more free.

After the opening is made, the matter should be pressed out, and the wound poulticed, or the adhesive process attempted by pressing the sides of the cavity together, and retaining them in that position, (leaving a sufficient hole for the escape of matter,) by strapping; or, if necessary, by the application of bandages.

If the edges of the wound should not unite in any part, a little injection of sulphate of zinc or copper may be used.

21. Hectic fever, sometimes attending abscesses, does not arise, as was formerly supposed, from absorption of the matter into the system; for, till after the abscesses have broken, the constitution is not attacked with it.

The formation of matter is usually attended with a slight fever, but not of the hectic kind; the tongue will be clean, the pulse very little affected, and the patient very slightly deranged; but after an opening is made into the part, constitutional irritation comes on; and life is then endangered.

22. The degree of hectic fever is not at all proportionate to the size of the surface on which the matter is formed.

For in extensive sores of the leg, there will be little or no inconvenience; whilst a sore on the lungs, of the size of half-a-crown, produces hectic fever of the most violent kind.

23. Old surgeons imagined, that the local irritation attending the opening of abscesses, was depending on the admission of air into the cavity, but from my own observations, and the result of many experiments, this is not the case.

GRANULATION.

1. A granulation is a newly-formed part, generally red in colour, and having the power of secreting pus; and is produced by a similar process to adhesion.

After opening an abscess, adhesive inflammation is produced in the internal surface of the cavity. A layer of adhesive matter is in this way thrown out, and if the sides of the abscess are brought together, by passing a roller round it, we may often prevent the future formation of matter; but if the union by adhesion, does not take place, then granulations are formed.

2. The manner *in which granulations* are formed, is as follows:—*When an abscess is opened,* or when a wound has been produced,

if the edges are not brought together, inflammation is excited; and this inflammation occasions an effusion of the fibrin of the blood upon the surface of the wound. This fibrin is poured out in a layer upon the surface, and soon becomes vascular, for blood-vessels, which are elongations of the vasa vasorum of the divided vessels, are forced by the action of the heart into the fibrin as it becomes deposited, layer after layer.

The difference between the mode of union by adhesion, and by granulation, is, that in the latter, vessels shoot to the surface of the layer, which has been thrown out, terminating by open mouths on the surface of the newly-formed substance, and secreting pus, at the same time that a layer of fibrin is effused. The fibrin which is thrown out, besides the purulent secretion from the vessels, forms a second layer, into which the vessels shoot as before. The vessels supporting the first layer, are the means of supporting the second layer, where the vessels terminate as before, by open mouths on the substance effused. In this manner, layer after layer is formed, until the cavity becomes filled.

3. Granulations are usually exceedingly sensible, and very vascular, having nerves, arteries, veins, and absorbent vessels.

The vessels are principally arteries, which throw a quantity of blood to the surface of the wound, and then secrete pus. There is a vein accompanying each artery, and the fluid conveyed by the vessels, is partly converted into pus, on the surface of the ulcer, and partly returned back to the heart.

4. Granulations which spring from parts endued with great sensibility, such as muscles, are extremely sensitive.

Many granulations, such for instance, as arise from bones, have no sensibility whatever, unless, indeed, they spring from the cancellated structure, or the bone is in an inflamed condition.

5. Granulations appear to become vascular in the following manner:—An artery enters at the base of the granulation, and is there divided into radiated branches; from these vessels pus is secreted, and an incrustation is formed, producing a layer of *adhesive matter* on the surface of the granulation.

6. Granulations are not good absorbent surfaces in ulcers recently formed, but if the ulcers have existed for any length of time, the absorbent vessels readily take into the system any substance which may be applied to them. This should caution the use of arsenic, and any other poisonous application.

It is not an uncommon practice to inject a solution of a grain or two grains of oxy-muriate of mercury, into sinuses, for the purpose of stimulating the vessels. If the sinus has existed for a length of time, the oxy-muriate of mercury is frequently absorbed, and the mouth becomes affected in the same manner as if the mercury had been taken into the system, by rubbing it into the skin, or taking it into the stomach.

7. Opium, when applied to the surface of sores, is very readily absorbed into the system; and I believe it is often a very useful application.

Its effects, when absorbed into the system, are the same as when it is introduced into the stomach, which are only to be removed by the free administration of active purgatives.

8. Granulations are very readily united to each other, by bringing the edges of the two granulating surfaces together, so as to produce the adhesive process.

A knowledge of this circumstance will save much time, for instead of waiting for the tedious process of the union of both surfaces, by granulations filling the cavity, you have only to bring one portion of the granulations in contact with the other, bind them well together with adhesive plaster, and they will be sure to inosculate.

CICATRIZATION.

1. Cicatrization is the formation of the new skin over a sore, and is effected by the vessels at the edge of the skin, forming granulations; and these granulations uniting with the granulations of the surface of the sore.

The granulations produced from the edge, proceed towards the centre, and those on the edge inosculate with those on the surface of the sore, and are united by the adhesive process. The vessels become elongated from the edge of the sore, and proceed in radii from the circumference to the centre. Day after day, an addition is thus made to the cicatrix, until at last, the vessels reach the centre from every part of the circumference, when the process of cicatrization is completed.

2. Some surgeons will say that cicatrization sometimes commences from the centre of the sore, and that the centre of the sore has in itself the power of forming new skin; but that is not the case, for the new skin in the centre is produced in consequence of the whole of the skin not having been ulcerated away, and granulations arising from that part of the skin which was left.

This only happens in irregularly formed sores, where the healing process has gone on to the centre, and then the sore has broken out in the circumference. If granulations arise from any portion of skin in the centre, these granulations produce new skin, and an insulated portion of skin is produced, forming a part of the cicatrix, which is not afterwards ulcerated away.

3. When a cicatrix is formed in the first instance, it is extremely vascular; but when it has existed for any length of time, the blood-vessels become contracted, and it is whiter than the original skin, loses its vascularity, and is endued with less living power than the surrounding parts.

4. The form and situation of a sore, very much regulates the readiness with which it is covered in by cicatrization; so that you may always expect, that a round sore will be longer in healing than a longitudinal one.

The reason is, that the vessels have to elongate much less from the edge to the centre, in a longitudinal than in a circular sore.

5. In the formation of cicatrices, the original parts may all *be re-produced,* except muscle and cartilage.

A muscle unites by tendon, and the cartilages of the ribs unite by bone. This, however, will depend in some measure on the age of the person; for in very young subjects, cartilaginous union will be produced; but in subjects more advanced in years, the cartilages of the ribs invariably unite by bone.

6. The skin which is produced in a cicatrix, is true skin, the cuticle is very quickly re-produced, and the rete mucosum, after a short period.

The cellular membrane is also re-produced, though it has at first the appearance of a solid fibrous mass, which requires some time before it is drawn into the reticular texture, similar to the original membrane. Tendons, bones, and nerves are also re-produced, but there is some little doubt, whether nerves assist at all in the restoration of sensation by anastomosis.

ULCERS.

1. An ulcer may be defined to be a granulating surface, secreting matter, arising from an inordinate action of the absorbents, produced by previous inflammation.

By some writers an ulcer is defined to be a solution of continuity in any of the soft parts of the body, attended with a secretion of pus, or some kind of discharge.

2. Ulcers are usually distinguished from each other by the symptoms which they exhibit; the causes by which they are induced; and by the parts of the body in which they occur.

In treating of ulcers, I shall first describe the appearance of ulcers in what may be termed their healthy state; I shall then detail the several circumstances which render their cure difficult, and proceed to point out the general varieties, and the treatment most likely to prove efficacious.

3. *Healthy Ulcers:*—When an ulcer is in a perfect healthy *state, the granulations are red* and small upon the surface, rising

a little above the edge; the discharge of matter, of the app of cream; and the edge of the sore whitish, and nicely to the surface.

The florid colour of the healthy granulations, is produced by th vessels having a considerable quantity of arterial blood, and a free cir Their being raised above the surface of the sore is necessary, in ord sore should heal kindly. By the edges of the sore being nicely adapt circumference, the granulations springing from the surrounding ski with those of the surface.

4. When you open an abscess, or when a wound is pr which cannot be healed by the adhesive process, you m courage the growth of granulations, by the application gentle stimulus of poultices, and when the granulations ha to the surface of the skin, press down the granulations edge on those of the surface, either by the application of a plaster, or unctuous substances.

The more unctuous the substances are, the better; for the vessels a greater facility in shooting towards the centre, and the granulati bedded in this unctuous matter, will more readily extend along th of the sore.

5. Such are the principles of treatment applicable to u the healthy state; we shall now proceed to consider the ments to the healing process, which frequently occur, and a different mode of treatment necessary.

6. When there is too prominent a state of the granu (vulgarly called *proud flesh*,) rising considerably above t of the skin, they are necessarily prevented from uniting wit of the surface. In order to prevent the continuance of th of the sore, the common treatment is, to apply dry lint centre of the sore, and some unctuous substance to the e

***The lint*, by its pressure, prevents the growth of granulations in th**

while the unctuous substance allows the granulations on the edge, to proceed, and inosculate with those on the surface of the sore. The lint should not be applied to the edge of the sore, for if it is, the granulations will be prevented from proceeding towards the centre.

7. In those ulcers in which luxuriant granulations shoot up near the edges of the sore, our practice is just reversed; for instead of applying lint to the centre, we must use a kind of caustic, to destroy the prominent granulations at the edges.

The nitrate of silver, and the sulphate of copper, are the common caustic salts in general use.

8. Adhesive plaster is also used to keep down granulations.

The common adhesive plaster is, usually, too stimulating for the purpose. A plaster, composed of equal parts of the emplastrum thuris compositum and the emplastrum saponis, is better calculated to promote the healing process.

9. Applications of too stimulating a nature, will sometimes excite inflammation and excoriate the skin, so that we are often under the necessity of leaving off the adhesive plaster: it sometimes happens, that the action is so great as to oblige us to apply sheet lead to the surface of the sore.

When this is necessary, you may apply a piece of lint covered with the ceratum cetacei; over these, a piece of sheet lead, and round the whole, a roller should be passed of about five yards in length.

10. *Indolent Ulcers:*—There is often great difficulty in the cure of ulcers, when they are of a languid condition, and the action too slight.

To overcome this unhealthy state of the sore, the application most commonly used, is the unguentum hydrargyri nitrico-oxidi; which occasions a determination of blood to the part, and produces a florid redness in the granulations, instead of the semi-transparent appearance which they assume in the languid state of the sore.

11. The mercurial application produces, however, a w appearance in the edge of the ulcer, arising from the thick state of the cuticle, which prevents the growth of the gran tions on the edge.

This may be corrected by the application of the unguentum hydra fortius, to the edge of the sore. The oxy-muriate of mercury with water; and lotions, such as the sulphate of zinc, in the proportion of grains to one ounce of water; or the sulphate of copper, in the ratio of grain to three ounces of water, are frequently applied with the same vie

12. In addition to the means already mentioned for the of indolent ulcers, it will be highly useful to employ some mulating plaster.

The emplastrum galbani compositum is a very good one; the adhe plaster will not answer the purpose, the sores are languid, and the obje to increase the action in the part.

13. The constitutional powers of a person afflicted with in lent ulcers are weak, and the circulation generally tardy.

You should, therefore, recommend in addition to the local remedie generous diet, free exercise, and, in fact, every thing calculated to imp the general health.

14. *Inflamed Ulcers:*—Here you have a serous discha from the sore; a bloody ichor, composed of serum and the particles of the blood; a disposition in many cases to slou the surface covered with a brown incrustation; and the skin surrounding parts highly inflamed.

15. The treatment which is applicable to inflammation general, will be of service in these cases, where inflammat has been kept up for a long time, to a high degree.

16. Fomentations and poultices must be employed: rest

the recumbent posture be enjoined; and the general secretions of the body attended to, for without attention to the constitutional treatment, all your local applications will be of very little use.

Fomentations will tend to produce a secretion from the part; and poultices, by their soothing quality, to promote the growth of granulations: and both will evacuate the matter from the wound. After these applications have been applied, the vessels begin to form, and the sore assumes a better appearance: healthy secretions are thrown out, granulations shoot up, fibrous matter is deposited, and in a little time you will have the skin covering the wound.

17. *Gangrenous Ulcers*:—In ulcers of this kind, the surface is perfectly free from any discharge; the surrounding edges of a livid appearance, with small vesicles or blistered spots on them; and the patient suffers much from irritative fever.

18. In the treatment of these cases, you must adopt constitutional as well as local remedies.

19. The recumbent posture must first be enjoined, as it is essentially necessary to promote the separation of the dead parts; a generous diet allowed; stimulating medicines administered; and moderate stimulating applications, to promote a slightly increased action on the part; sometimes, however, when the action is excessive, you must, on the contrary, sooth the part, and lessen the stimulating nature of your constitutional treatment.

The most approved constitutional treatment in these ulcers, is rest and generous diet; port wine should also be allowed, and spirits may be given to those who have been in the habit of using them. By brandy and opium I have seen these wounds cured; in fact, they are our sheet anchor in the treatment of gangrenous ulcers. The best medicine to be administered is opium and ammonia; twenty drops of the tincture of opium, three times a day, with ten grains of the ammonia, in an ounce and a half of camphor mixture, and one drachm of compound tincture of cardamoms.

20. When there is debility of the part; a slight stimulus should be employed, but when there is excessive action, it is to be avoided.

The best application for producing a slight stimulus, and checking gangrene of the part, is the nitric acid: there is none equal to this; fifty drops of it to a quart of distilled water, is the average quantity; but this, however, may be increased or diminished, just as it may give pain to the part.

21. There is usually much difficulty in the cure of gangrenous ulcers, so that you must necessarily have recourse to a great variety of applications; for after you have tried one, which at the beginning did good, you will, from the wound getting worse under its use, be obliged to change it for another, and so on.

The other local remedies, in addition to nitric acid, are, the application of oil-silk to the wound, so as to prevent the smell arising from the parts, tainting the room:—Nitre, in the proportion of one drachm to a pint of water, agrees very well with the sore, and has the same effect as nitric acid, though in a diminished degree:—all the combinations of nitric acid appear beneficial. Sulphuric acid is also of use in these cases, six drops of the acid to an ounce of water; but the muriatic acid is not to be recommended. Poultices made of port-wine, porter, dregs of lees, yeast with meal, may all be used; as also the carrot poultice.

22. *Irritable Ulcers:*—May be known by the inequality of the granulations, the discharge of bloody pus, and the great tenderness in the part; so that the patient, when touched in that part, shrinks with excessive sensibility.

23. There is always considerable difficulty in the treatment of these sores. The alterative and anodyne plans must be adopted.

The best local remedy you can apply, is one composed of one drachm of powdered opium, with four drachms each of the unguentum cetacei and unguentum hydrargyri mitius. This must be spread on lint, and applied to the part, twice a day.

24. *Your internal* remedies must not be carried so far as to

produce ptyalism, or to affect the constitution severely: they should be given so as to restore the secretions, and to diminish the action of the nervous system.

Calomel and opium are the internal medicines on which you are to rely; a grain and a half of calomel with a grain of opium, morning and evening.

Other acids, such as the compound decoction of sarsaparilla, are sometimes used: I do not think much of it myself in these cases; but after the use of mercury, it diminishes the irritability of the constitution, and soon soothes the system into peace: with this view, and combined with other remedies, it may be beneficial.

25. *Sinuous Ulceration:*—Whenever a sore extends to any considerable depth, so that the discharge has to travel through a channel before it arrives at the surface, such an ulceration is called sinuous.

The cure of sinuses is rendered difficult,—first, from matter forming at the bottom, forcing its way through the passage, and, thereby, disturbing the healing process, by breaking down whatever adhesions or granulations form on its sides; and secondly, the same interruptions occur from the action of the muscles, when these ulcerations happen in muscular parts, thereby sometimes rendering (as in fistula in ano) a division of the muscle necessary.

26. Your object of treatment, in the cure of sinuous ulceration, must be to promote healthy granulation, either by cutting the canal open, and applying stimulants or caustics; or, if it should not be necessary to excite the part, by stimulating injections, such as the Tinctura Lyttæ; these will readily produce inflammation; adhesive matter will be thrown out, and by taking care to keep the sides of the sinus in contact, the parts will permanently coalesce.

27. *Ulcers under Nails:*—Are sometimes exceedingly difficult to heal, from an irritation caused by a portion of the nail, producing fungus; but as soon as the projecting part of the nail is

removed, the fungus will cease to grow, and the ulcer im heal.

A nail, for example, from pressure or some other cause, shoots i beside it; a fungus springs up: the surgeon applies caustic ai it; in a short time it rises again: the caustic is repeated, and disappears; it speedily, however, returns, and will continue notwithstanding all his efforts to the contrary, unless he r irritating cause.

28. There are two modes of treating these ulcers; application of a blister; or introducing a piece of lint nail; the former brings away the cuticle and sometim along with it; the latter, however, is more lenient, an remedy.

Pare down the nail as thin as you can, without producing ble raise it a little, and introduce a small piece of lint: in this way, tl cause may generally be removed; but sometimes it happens, tha so exceedingly irritable, that even lint cannot be lodged on without producing increase of inflammation and pain; in su would recommend slitting up the nail with a pair of scissors, c where the disease exists, and then, with a pair of forceps, tur completely remove the divided portion. The part should be pou the operation.

29. The nail sometimes turns black from a disease oi from whence the nail proceeds: such affections are n mon, and are often thought to be syphilitic; this opini ever, is erroneous.

You must wash the sore with the black wash, and administer pills: sometimes, in these cases, we are obliged to dissect out th produces the nail.

30. *Whitlow:*—This is an exceedingly painful swe minating in an abscess by the side of the nail: the ma at first under the nail, but unable to force its way thı

horny substance, burrows under it, thus producing excessive pain and irritation.

Fungous excrescences often arise in these cases, which induce the surgeon to apply caustic, but this ought never to be done. After fomenting and poulticing the part, remove the loose portion of nail; this will permit the matter to escape, and instantaneous relief is the result.

31. *Menstrual Ulcers:*—These are sores peculiar to the female sex, and are depending on amenorrhœa. Their peculiar character is, that once in three weeks or a month, they are covered with blood; so that they will one day be covered with pus, and probably, on the next, be covered with blood.

This state of affairs, is the result of a defective menstrual discharge, so that the superabundant quantity of blood, which ought to be voided in the natural way, is thrown back upon the system, and obtains an escape through the ulcer.

32. In these cases, in addition to local applications, you must endeavour to improve the state of the constitution, by restoring the defective secretions.

Menstrual ulcers should be well moistened with the black wash, and the patient should take about an ounce and a half of the mistura ferri cum myrrhâ, twice or three times a day; and five grains of the pilulæ hydrargyri sub-muriatis compositæ, every night at bed-time.

33. *Chronic Carbuncles:*—An ulcer of the cellular membrane, or what is called chronic carbuncle, occurs when the health is impaired:—a small swelling forms under the skin, at first red, then turns purple, and ultimately sloughs: a white substance is soon perceived at the bottom of the sore, and as soon as this comes away, healthy granulations will rapidly form, and the wound become healed.

34. As these cases appear to arise from an impaired constitution,

the general health must be improved and the granulating proc incited.

The first indication will be answered by the administration of aperie and alteratives; and, in cases of great debility, by giving ammonia. If one medicine improves the nervous system when deranged, more th another, it is the carbonate of ammonia. Half a drachm of ammonia, w half an ounce of compound tincture of cardamoms, and five ounces an half of spearmint water is my usual mixture: two table spoonfuls two three times a day. The second indication, or local treatment, must effected by poultices, or if they will not answer, by slight stimulants, as black wash, or caustic.

35. *Superficial Ulceration:*—It not unfrequently happe the skin, in various parts of the body, gets into a state of super cial ulceration, and without any evident cause.

The cure of superficial ulceration is best effected by the local applicat of either the black wash, the unguentum hydrargyri nitratis, or the ungu tum zinci-oxydi: and the internal use of the oxy-muriate of mercury, conjunction with the tincture of bark, more especially when the ulcerat is connected with disease of the mesenteric glands.

36. *Noli me tangere:*—This is a disease of the face, wh has not yet been correctly described; the truth is, that it is ulceration of the glands or follicles of the nose, those small ca ties from which you can squeeze sebaceous matter: the ulcerati extending deeply, at last, even the cartilages of the nose beco destroyed.

37. The plan of treating this disorder will depend upon c cumstances, for if the ulcer is deep, you must use an arseni preparation; but if it is not deep, you may cure it by mer painting the surface of the sore with a solution of the nitrate silver.

The arsenical preparation which I always use, is one ounce of sperma ointment, and one drachm each, of oxyde of arsenic and flowers of sulp well incorporated:—You must spread some of this ointment on lint, lay it on the ulcer, and leave it there for twenty-four hours; then remove it; a slough will come away; you dress the ulcer with some simple ointment, and in a short time it will generally heal.

38. Deep ulcers, having a malignant aspect, often remain in the face of old persons without producing any bad consequences. The best application is the black wash.

39. *Ulcers from Varicose Veins:*—These are ulcers most frequently situated in the lower extremities. They are the result of inflammation produced by an impeded venous circulation; and as soon as the inflammation is set up, the sequel is desquamation of the cuticle; then the whole face of the surface covering the diseased veins is formed into a crust, under which a quantity of serum is secreted.

A varicose condition of the veins may arise from many causes; but the more immediate one appears to be, either a thickening of the valves, so that they are incapable of approximating, or a rupture of the valves; in either case, the effects will be the same,—the veins being distended and serpentine, and the valves widely separated from each other,—the arteries, by their powerful attempts to return the blood to the part, soon excite inflammation; and ulceration quickly supervenes.

40. In the treatment of these ulcers, the recumbent posture must be strictly enforced. Lint wetted by the mercurial wash, should be laid on the ulcer, oil silk over these, and then the limb should be well and regularly bandaged, beginning at the foot.

Opening the veins about twice a week, if necessary, is a very safe and effective practice; then applying a bandage, and keeping the parts wet by means of an evaporating lotion. If the punctures, at any time, should not unite, but fret into ulcers, you must apply the black wash.

41. In persons who have been subject to varicose veins for a

length of time, the crust just alluded to, will come off, hemorrhage follow; but by placing the patient in a recumb posture, applying a bandage, and keeping the parts consta cooled with the spirit wash or cold water, you will, in all pro bility, get rid of the disease altogether.

It was formerly the practice, when the veins were in a varicose s to tie and divide them; but it is a practice replete with danger, there let me exhort you never to sanction it. Another overwhelming objectio the operation is, that when it does not prove fatal, its ultimate effect perfectly nugatory.

42. *Ulcers in Joints:*—These arise from an inflamma caused by a deposition of the urate of soda, so that persons come to you with many joints open from this cause, and the tilages more or less absorbed.

If it is necessary, you must increase the openings through the skin, remove the urate of soda, that being the exciting cause.

43. *Use of Ulcers:*—Ulcers are sometimes very beneficia the general health, for they are frequently formed for the p pose of allowing the discharge of extraneous bodies.

When such substances become lodged, therefore, in any part of the hu frame, inflammation is excited; pus becomes secreted, which pressing wards the surface, ulceration takes place, and the extraneous substan thus afforded an opportunity of escaping.

44. Ulcers frequently occasion exfoliation of bone, to a considerable extent. Here you can assist nature by applicati which act chemically on the parts; therefore apply a lotion c posed of muriatic acid and water, or nitric acid and water.

This wash will dissolve the phosphate of lime, or earthy matter of bone; and by removing this inanimate substance, the power of the absor will be increased, and a quicker separation of the diseased from the hea parts, be the consequence.

45. *Edges:*—The process of healing ulcers is occasionally very much impeded by a thickened state of the edges, to obviate which, the edges must be adapted to their surfaces.

The emplastrum galbani compositum will remove the indurated cuticle, and stimulate the parts to action; if this, however, should not succeed, you may use the unguentum hydrargyri fortius, or unguentum lyttæ; or you may scarify the edges.

46. The edges of sores are sometimes very much *inverted;* for which the usual constitutional medicines are to be given, and nitrate of silver applied to the edges, and the black wash to the surface.

47. Some sores have their edges very much *everted*, and this affection is commonly symptomatic of a cancerous diathesis: the usual method of treatment is to poultice such ulcers, and to attend particularly to the general health, until the edges have resumed a natural and healthy state.

The admirable mode recommended by Mr. Baynton, should be had recourse to, which, by approximating the sides of the wound, and thus facilitating the process of granulation and cicatrisation, will surprisingly contribute towards the completion of the cure.

GANGRENE.

1. Gangrene is a partial death, or the death of one part of the body, while the other parts are alive:—It is produced either by excess of inflammatory action, where the powers are natural; or by a less degree of inflammatory action, where the powers of the part are feeble.

In mortification, or gangrene, the arteries, enfeebled by excessive a or incapable, from any cause, of carrying on circulation, are depriv their vitality, the blood coagulates in them, and the death of the p produced.

2. The symptoms of gangrene differ according to the ma in which it is produced.

Authors have generally distinguished mortification into two stage first or incipient one they name *gangrene*; the second or latter stage is, when the part has become quite cold, black, fibrous, incapable of m and destitute of all feeling, circulation, and life, is termed *sphacelus*.

3. When gangrene is the result of high and active inflamma the pain attending its production is exceedingly severe; the in mation is very extensive; there is usually a blush to a conside extent; and there is generally, though not always, a conside degree of swelling.

Under these circumstances, the secretion from any sore which ma ceases; for the skin no longer perspires. The surface of the skin b of a dark colour; it is said to become purple, but it is rather of a br tinge. The cuticle is raised; a vesication is produced, and wh breaks, it is found to contain a bloody serum. When the serum charged, the skin assumes the gangrenous appearance, and becomes pe insensible. The vesications extend to parts beyond the ulceration.

4. The constitution suffers considerable derangement gangrene; there is a high degree of irritative fever—quick small and thready pulse; generally irregular—usually deli and it is also attended with vomiting and hiccough.

Hiccough is the characteristic sign of gangrene, situated in whatev of the body it may be. The fact is, that when gangrene arises diseased state of the constitution, the stomach is extremely derang this derangement of the stomach is followed by a spasmodic cont of the diaphragm, producing hiccough. Hiccough may be arreste time, either by cold water, or a slight stimulant.

5. We have just related the symptoms when gangrene

result of excessive action: we will therefore proceed to speak of it, when it is the effect of a low degree of inflammation; as from cold or any other analogous cause.

6. When a great degree of cold has been applied to any part for a considerable time, the part will become benumbed; that is, its nervous powers will be diminished; and when it is thus enfeebled, it will be unable to bear a very slight degree of supervening inflammation, so that gangrene will be produced.

When you receive cases of this kind, be cautious that heat is not too suddenly applied; for even the common heat of the bed, frequently occasions inflammation, which is extremely liable to proceed to gangrene, in consequence of the diminished nervous influence of the part.

7. When gangrene is the result of either circumstance we have mentioned, the process of separation soon takes place, and it is one of the most curious operations of nature, in the human body.

Under its influence, even large members are destroyed, without any danger from hemorrhage, or the smallest jeopardy to life.

8. When the process of separation takes place, the first appearance we observe is a white line; at this white line, the cuticle is raised, and in a day or two separates, leaving a chasm beneath it, produced by the absorption of the living skin in contact with the dead:—the next part which begins to separate, is the cellular tissue immediately under the skin; afterwards the muscles nearly opposite the edge of the skin. Tendons, like the cellular tissue, do not separate opposite the skin, but at a considerable distance from the part at which the sloughing takes place; for tendons are incapable of resisting the inflammation. The nerves separate in the same manner as the muscles; the arteries and veins become as it were hermetically sealed with coagulum, and

also suffer in the general destruction; and lastly, the bo
themselves exfoliate and the limb is completely removed.

Since the *white line* alluded to, is the barrier which nature sets up betw
the dead and the living parts, it is anxiously looked for by the surgeon,
becomes a criterion of the cessation of mortification. The elevation of
cuticle at the white line, is a vesication which forms a line of circumva
tion around the gangrene. The living skin taken up by the absorben
carried into the constitution; the absorbent vessels act on the living p
but not on the dead; nor is the dead skin absorbed after the time w
granulations have formed, but it becomes loose, and ceases to be attac
to the surrounding parts; the chasm formed by the absorbent vessels affi
ing an opportunity for separation. Gangrene proceeds to much greater
tent in the cellular tissue, than in the surrounding skin, because the cell
membrane is a part of weaker living powers: it is for this reason th
sloughing disposition in sores extending to the cellular membrane is so d
gerous. Wherever skin separates, the muscles give way; a line of separa
is formed, and the living portion of muscle is taken from the dead. B
are very slow in the process of exfoliation; hence they are often taken a
when the process of separation is in other respects complete.

9. During the progress of mortification, nature has provi
against hemorrhage, on the destruction of the blood-vessels
that even the larger arteries are cut through without any bleedi
or danger of the patient's life.

This happens in the following manner:—The blood in the vessels of
dead part becomes coagulated; the coagulum, however, does not co
itself to the dead part, but extends to the living vessels which join it, an
in this manner, glued to the inner side of the artery, so that the vessels
as it were, hermetically sealed.—The same thing takes place in veins,
coagulum adhering to the inner side of the living vein, so that no blood
escape. The arteries are not only sealed at the part through which na
cuts it, but at a considerable distance above it, in order to provide ag
the danger which would otherwise arise from a separation of the coagu

10. Gangrene is frequently the effect of a debilitated stat
constitution:—whatever, in short, weakens the general he
much, disposes it to the production of gangrene; for the b
when thus debilitated, cannot bear any excess of action. I

also sometimes depending on an impeded circulation, whether arising from cold, from pressure, or from a want of natural strength in the circulation, so that the parts are not nourished in their accustomed manner.

It may be stated, as a general principle, that gangrene generally arises from inflammation, and is occasionally the consequence of disease unaccompanied with inflammation, by which the circulation is considerably impeded.

11. *Treatment*:—If gangrene is likely to result from inordinate action, we should endeavour to relieve the part by local abstraction of blood with leeches, and the application of soothing poultices. It will be necessary, at the same time, to attend to the general health; for the best means of preventing gangrene, are to restore the secretions by calomel, and to diminish irritability by opium; and, in some cases, by taking away very small quantities of blood.

In this metropolis, it is seldom safe to take blood from the arm of patients, to prevent gangrene; but in the country, a different practice may be pursued. When you take away blood, however, do not take more than eight or ten ounces, lest the vigour of the circulation, and consequently the nervous powers of the constitution, should be too much diminished.

12. If gangrene is likely to arise from the application of cold, the treatment must be different;—in these cases, the action of the parts is feeble, from the diminution of nervous power, and it will be proper to restore it to a healthy state by stimulants of the most gentle kind. For this purpose, the best application is the camphorated spirit of wine, accompanied with gentle friction.

If you are called to a patient whose feet are benumbed from the effects of cold, you must sit by his bed-side, pour camphorated spirit into your hand, and rub it on his feet with the utmost gentleness, so that the part may not be irritated by violent friction. When the first effects of cold are removed, it will be proper to apply cold poultices; for warm applications are to be carefully avoided. When parts are frost-bitten in colder climates, the common practice is to restore the circulation by rubbing them with snow.

13. We have now concluded the means of prevention; we will therefore now proceed to speak of the treatment, when gangrene has commenced.

14. As soon as gangrene has commenced, it will be necessary to apply a gentle stimulus to the parts, with a view of supporting the action of the surrounding parts which are threatened with the destruction of life.

Poultices of stale beer grounds with linseed-meal; spirituous fomentations; port wine poultices; turpentine, particularly in sloughing sores, arising from impeded circulation; yeast, and a composition of vinegar and camphor mixture, have all been beneficial in gangrene.

15. When the dead are separating from the living parts, the *epithema plumbi sub-acetatis* is a very useful application during the sloughing process, the nitric acid; when the gangrene stops, and the line of demarcation is drawn, and the sloughing process is commencing, the same acid may be employed in the proportion of fifty drops to a pint of water.

The epithema consists of one ounce of the conserve of roses well mixed with two drachms each of the honey of roses, tincture of opium, and the solution of sub-acetate of lead.

16. These are the different modes of treatment for the prevention of gangrene, and of arresting the sloughing process. We will next proceed to speak of the propriety of amputation.

17. *Amputation:*—There is no occasion in general for amputation in cases of gangrene, when the sloughing process is going on; if you will be content to wait a short time, and the

patient is disposed also, you will find the parts will separate as well without as with an operation.

The cases in which you are called upon to perform the operation, are, when the patient will not be able to sustain the shock to the constitution; then, if gangrene be going on in any part, or through the middle of the leg, by which the power of the constitution will be nearly destroyed, you may have recourse to an operation; but even here, there will not always be occasion for it. Always, if you can, give the patient a chance of his life, without resorting to it.

18. In constitutional gangrene, never amputate till the general health is good, the sloughing process commenced, and healthy granulations are to be seen on the surface of the sore; for, if an operation is performed, the parts will assume exactly the same appearance as before it.

19. When gangrene arises from an accident, or defective action from pressure on some important vessel, amputation may be performed without the least hesitation.

20. Old persons are very subject to gangrene of the toes and feet, arising from ossification of the smaller arteries; which losing their elasticity, and combined with a debilitated action of the heart, give rise to this disease:—It is attended with some degree of fever; the cheeks are of a florid red colour, and the constitution becomes considerably influenced.

The appearances which the part assumes, are these:—at first it is red and painful; the person, thinking little of the matter, puts upon the affected part a piece of linen; in a few days the cuticle comes off, and there issues from the surface a sanious discharge; red streaks are now seen passing from different parts of the foot, up the leg; and the glands in the groin often undergo considerable inflammation and enlargement; all the absorbent vessels of the foot becoming inflamed, produce universal redness of the diseased member. Soon after this, the gangrene begins to extend, destroys the whole of the foot, and passes to the upper part of the leg, where it usually stops.

21. This gangrene will not commonly destroy life, if att be paid to the patient.

A poultice composed of port wine and linseed meal, will be found local application; and your internal remedy should consist of opiu bined with ammonia. Never amputate, whether there are healthy g tions or not, for as surely as you do, mortification of the stump wil vene.

ANTHRAX OR CARBUNCLE.

1. Carbuncle is a hard and circumscribed inflam tubercle like a boil, which sometimes forms on the cheek or back, and in a few days becomes highly gangrenous.

When carbuncle is about to take place in any part, it is genera ceded by pain, and at first a swelling of considerable hardness occasioned by the adhesive inflammation; the surface of the tum assumes a livid redness and a spongy soft feel; little ulcers now form skin, which, from their number, give it a sieve-like appearance, so n are the orifices: from these a white discharge passes; this fluid re water and flour mixed together, and a surgeon who has seen much buncle, knows the nature of the disease immediately on seeing the dis When the little openings are all formed into one, the dead cellula brane begins to escape, for it previously cannot do so, from the small the apertures.

2. Carbuncles usually proceed from internal or constit causes.

They are commonly attended with considerable excitement, gre tration of strength, sickness, loathing of food, head-ache, and symptoms of low febrile impression. In very bad cases, you will these indications in an aggravated state, accompanied with syncope, anxiety, and sometimes delirium.

3. That carbuncle is connected with an idiosyncrasy o

peculiar state of the constitution, is very generally thought, though not so satisfactorily substantiated.

4. Carbuncles do not generally prove fatal, but the prognosis will depend very much on the size and situation of the tumour.

In ordinary situations they usually do well; but if they are on the neck or head, local derangement is so great, that effusion takes place between the tunica arachnoides and pia mater, and death is the consequence.

5. In the treatment of carbuncle, you must pay particular attention to the secretions, and employ all means calculated to allay undue excitement, and to tranquillize the system.

The bowels should be relieved by a cooling aperient, after a dose of calomel: and the tendency to prostration of strength, and typhoid symptoms, combatted by a strictly tonic plan, as bark, ether, nutritious food, and so on. Fresh air is also highly necessary.

6. With respect to local means, do not vainly endeavour to disperse the tumour by refrigerant applications; you cannot succeed. Always have recourse, at once, to emollient poultices and fomentations.

Your peculiar treatment must consist, however, in making upon the surface of the swelling, at an early period of the disease, a large crucial incision, for the purpose of affording the deadened parts an opportunity of escaping; then applying the port-wine poultice, and giving the patient such stimulants (ammonia with opium), as will tend to increase the vigour of the constitution.

ERYSIPELAS OR ST. ANTHONY'S FIRE.

1. Erysipelas is a peculiar kind of inflammatory state of the skin, characterized by a diffused redness and slightly elevated

condition of the part, a burning or itching pain, and freque beset with vesications.

When touched with the end of the finger, a white spot is left, w immediately turns red again. The skin has a shining appearance, fe it were a little thickened, and somewhat less pliable than natural; whether complete vesications have been formed, or not, the cuticle pee on the decline of the inflammation.

2. Erysipelas may be distinguished from common inflam tion by the florid redness of the skin, accompanied with vesi containing an amber colour secretion under the raised cuticl

I would recommend you, as young men, to be very particular in sear out the cases of *inflammation* and *erysipelas* which are brought t hospitals. Examine them separately and collectively; study to know distinctly; for unless you do, you will probably mistake a simple ca inflamed skin, for erysipelas, employ the depleting system where a con indication is required.

3. The constitutional symptoms attending erysipelas, ar ways in proportion to the mildness or severity of the complai

4. In its mildest form, it is preceded or attended by no r rial complaints, or merely by a very slight indisposition, lan loss of appetite, and so on.

These symptoms are of short duration, and abate as soon as the epy appears, which increases for a couple of days, then remains unchanged a similar space of time, and afterwards turns yellowish, and gradually away, the cuticle at the same time peeling off. During the whole cou the disorder, the fever is slight, the pulse being sometimes only a disturbed previously to the appearance of the redness.

5. In a more severe degree of the disorder, the patient riences, for a couple of days before the erysipelas breaks out usual debility, heaviness in the limbs, headache, loss of app nausea, actual vomiting, oppression about the stomach, and like.

After two days, generally on the third, the erythema appears, attended with a gentle perspiration, and an increase in the secretion of urine, when the fever, and all other complaints subside. The disease then follows the same course as the first case already described.

6. In the third and most violent degree of erysipelas, which mostly attacks the face, the patient is affected with severe fever, headache, lethargic drowsiness, shiverings, vomiting, delirium, and so forth.

These symptoms do not, as in the foregoing examples, subside upon the breaking out of the erythema on the third day; but continue with undiminished vehemence until the local disorder goes off, which usually happens about the eleventh day, attended with copious evacuations from the skin and kidnies.

7. *Causes:*—As to the causes of erysipelas, I should say they are mostly constitutional; though not unfrequently local.

General irritability of the frame, or a peculiar state of the constitution, manifest the first; while violent passions, injuries, chemical, and other external causes, constitute the second class. In fact, whatever renders the body irritable, predisposes to erysipelas, and after a person has once had it, he is very subject to it again.

8. Certain parts of the body are sooner affected by erysipelas than others.

The head seems to be more commonly attacked than any other part; it often succeeds the most trifling injury to the scalp; and, like carbuncle, when it occurs in this situation, generally destroys life.

9. Erysipelas usually makes its appearance in spring and autumn, but seldom in winter. It is sometimes epidemic, and sometimes contagious.

10. *Treatment:*—With respect to the treatment of this affection, that must depend upon the constitution you have to deal with, and whether you are practising in town or in the country.

In London, the best thing you can do, is first to give calomel for restoring the secretions of the liver and intestines; then allow a generous diet, and administer the ordinary tonics.

You will find, where erysipelas attacks the lower orders of this town who weaken their constitutions by the excessive use of ardent spirits, tha gin may be sometimes advantageously employed as a remedy, at once being the evil and the cure.

11. Where there is simple erysipelatous inflammation going on to a great extent, accompanied with a full plethoric state of th body, then you must pursue a different treatment.

Mercurials to act on the liver, aperients on the bowels, and saline medicines will be necessary. Bleeding, though sometimes highly necessary, i not always so. The local abstraction of blood, a practice lately advocate with considerable warmth, is, in my opinion, injudicious.

INJURIES OF THE HEAD.

1. In considering the nature of injuries to the head, it i necessary to bear the following remarks in recollection, as concerns the *nervous system.*

2. That the *nervous system* is composed of the *brain,* th *medulla spinalis,* and *two sets of nerves,* one set issuing from the brain, and the other from the medulla spinalis. Beside which, there is the *grand sympathetic nerve.*

3. That an *immediate communication* exists between the stomach and brain, by means of the eighth pair of nerves, or *pa* , *vagum.*

4. That the *brain* is the medium through which the mind is communicated.

5. That the *grand sympathetic nerve* is, as it were, a system complete in itself, though bearing a connexion with the brain.

6. And, that the *nerves* are freely distributed to every part of the human frame, and are the means by which all *voluntary* and *involuntary motions* are maintained.

7. To these remarks, I shall add one or two observations on the symptoms which generally present themselves when a patient labours under an injury.

8. When the brain receives an injury, the symptoms stated to be the result of that injury are, general loss of sense and volition, if the injury be considerable; but if not so severe, some portion of sense and volition will remain.

When you are called to the bedside of a person thus situated, you will find him to be what is termed comatose; if you speak sharply to him, he becomes roused for the moment, mumbles some brief answer to you, and again lies down and relapses into his former sleepy state; thus you observe partial mental faculties and volition still remain. This symptom you should minutely note, as it will greatly assist you in your after diagnosis; and you should be upon your guard you are not deceived by the person being intoxicated.

9. In addition to loss of sense and motion, there is sickness; a laborious pulse, but quick on exertion; dilated pupils; and sometimes bleeding from the nose, which when the patient has been kept lying on his back, often occasions vomiting of blood; the fæces pass off involuntarily, and the urine is retained without power to evacuate.

To mention more symptoms, there is often partial paralysis or hemiplegia;

occasionally, squinting is produced, the natural direction of one or both becoming changed; permanent, partial, or total aberration of the m faculties may also be added to the consequences already named. Inj to the head are very dangerous, and persons usually fall victims to the

---

CONCUSSION.

1. Concussion is simply a shock which the brain has rece more or less severe, and attended with laceration or not.

2. The best marked symptoms are, increased motion o carotids; an apparent tranquil sleep; the instantaneous re to that state after being roused; a remarkable excitement o pulse upon using exertion, and the insensibility having immed followed the accident.

When called to a person whom you find in a state of stupefaction, b to a great degree, regular pulse, tranquil and regular breathing, a accident has existed some hours, you will generally be justified i nouncing that the injury has been trifling: but when the individual ha first seized with vomiting, is incapable of using any muscular powe loss of nervous influence, a total aberration of the mental facultie intermittent pulse and breathing; these will be found the diagnostic sy of severe injury, and the case is a dangerous one.

3. The diminution of the operations of the mind is oft great in concussion, even where considerable voluntary m remains, that you cannot possibly get any other answer fro patient, than "eh!" delivered in a gruff undertone.

The extraordinary changes which the memory sometimes undergoe the effects of concussion, is worthy of observation, for cases are rel which persons, on recovering, found they had lost all recollection of guage which they knew previously; and recent occurrences were not remembered as those of their younger days.

4. It is somewhat curious to observe the gradual change which ikes place in the intellectual faculties, as alterations occur in the rain; and the gradual diminution of ideas which have been more cently acquired, until at length they become totally obliterated.

Old persons are observed to be very fond of relating anecdotes of their uth, forgetting incidents of more recent occurrence; and the change hich takes place in the intellect, from injuries of the brain, is very similar the effects of age. The patient becomes, as it were, suddenly old; loses pressions of a recent date, and is sensible only of those which he has ceived in his earlier days.

5. With respect to the state of the brain under concussion, hen the concussion is not extremely violent, there is merely a ange in the circulation, and a corresponding loss of sensibility; t when the circulation is restored by proper means, the powers the mind will return with those of the body. On the other nd, if the concussion is severe, there will be laceration, accomnied with extravasation of blood, and the symptoms will be und to run into those of compression.

issection has pointed out, that when the concussion is very violent, a eration of the brain takes place, accompanied with extravasation of od, but when it is slight, no appearance can be discovered which indicates alteration of structure.

6. *Treatment:*—The great danger we have to guard against, the treatment of concussion, is inflammation of the brain. is must be prevented by taking away a very considerable antity of blood, and other reasonable means of reducing any rdinate action which might follow.

y bleeding largely at first, we not only remove existing inflammation, we prevent that which would otherwise occur. This practice, although ied by some, may be carried to excess; regulate your conduct by the ptoms, observe whether there is any hardness in the pulse, and whether complains of any pain in the head, if he has still the power of complaining; tch your patient with the greatest possible anxiety; visit him at least three times a day, and if you find any hardness of the pulse supervenin after the first copious bleeding, take away a tea-cupful of blood, but do no go on bleeding him largely, for you would by this means reduce the strengt of your patient too much, and prevent the reparative process of nature. necessary degree of inflammation is absolutely necessary, but it must b kept within bounds.

7. You are to use bleeding as a means of preventing inflammation, and not as a matter of course, the moment you are calle to a patient under concussion. You will always find the puls very weak, or scarcely perceptible, at the moment of the injury; wait till the pulse rises and re-action is indicated, then extract blood.

The brain, when lacerated, heals like any other organ, by the process of adhesion: it is necessary, therefore, under such circumstances, that there *should be* a slight degree of inflammation, for without it, the reparativ process cannot go on, and the patient cannot recover. Bear this always in your mind; do not abstract blood indiscriminately; use the lancet with caution; lest you reduce the animal powers too much, and evade a favourabl termination of your cases.

8. Emetics I have seen of considerable use in these cases, but I never order them for three or four hours after the accident, les there should be extravasation of blood in the brain, or any tendency to apoplexy.

Vomiting acts beneficially in simple cases of concussion, by relievin the stomach of its contents, as the accident generally happens to persons in a state of intoxication; and also by propelling the blood to the brain, and thus restoring the powers of life.

9. With respect to the exhibition of cathartics, the bowel should be kept open by calomel purges, followed by the infusio of senna and sulphate of magnesia.

The calomel should be given about two hours after the accident; an it will be useful to give to the patient, at the same time, a quantity of mil fluids to drink, as by this means, a disposition to purging is kept up counter-irritation is, as it were, produced, and the blood is drawn from the brain to the intestinal canal. Calomel, with lemon-juice squeezed in water, should also be given.

10. Perspiration on the surface of the body, should be obtained by antimonials.

The pulvis ipecacuanhæ compositus ought not to be used to promote moisture of the skin, on account of the opium it contains, as it confounds the judgment, and prevents your seeing what are the effects of the opium, and what those of the disease.

11. Counter-irritation is of use, but not until other means have been resorted to. The object of blisters is to subdue the inflammation when other means have failed.

I have known a patient, with pain in the head, sickness at the stomach, loss of strength, and throbbing of the carotids, who had been often relieved by blood-letting, for about two hours only after it was done. A person under such circumstances, I have known benefited by the application of a blister, on the principle not of increasing but subduing action, from an excess of which the ill consequences are to be feared.

12. In addition to the means already named for the treatment of concussion, you must pay strict attention to the mind; excessive anxiety must be prevented; for if you suffer the mind to be disturbed, you do little or nothing towards the recovery.

13. In the treatment of concussion, with children, you cannot always bleed from the arm; you must therefore open the jugular vein, apply leeches to the temples, and give calomel with mild drinks, so as to purge them.

14. For the after symptoms of concussion, as pain in the head, or sickness at the stomach, trephining was formerly much employed, but it is a practice full of danger, and of little or no use whatever.

Make an incision through the scalp; put issues in; wash the head with spirits of wine and water; use the shower-bath two or three times; and they will be found the best means of giving power to the system, and bringing the action of the brain into a healthy state.

COMPRESSION.

1. When a person is labouring under compression of the brain, it is known by the breathing being stertorous, the pulse slow, and the pupils dilated; to which may be added the symptoms of concussion.

2. The causes which produce compression are these three; extravasation of blood, fracture with depression, and formation of matter within the skull.

3. When the brain is compressed by extravasated blood, the symptoms do not directly occur; the person at the time of the injury is often stunned, recovers himself, and a short time after falls into a comatose state, and then the apoplectic stertor begins.

Extravasation with concussion, renders the case of a different nature; then the symptoms of concussion come on first, and the apoplectic stertor and other symptoms of compression succeed.

4. The extravasated blood is found in three different places: first, between the dura mater and pia mater; secondly, between the pia mater and brain; and lastly, within the substance of the brain itself.

These are the three different situations in which extravasation of the bloo is principally formed: but I do not find any difference of symptoms produce

tuations; the compression is produced by the pressure of
e quantity of blood effused will depend on the size of the
ra mater that are divided. If there should be any blood
gin of a nerve, there will be partial paralysis of the part
upplies.

reatment of these cases there is little to be done.
ı of blood occurs with fracture, the trephine may be
ould deplete freely, for the purpose of preventing
and lessen irritation, by enjoining quietude, and
wels.

ruise near the fracture, indicating the spot where the blood
ıy trephine, that is, before symptoms of excitement come
ake place, you must deplete only, and not dream of per-
ıtion on any account whatever.

FRACTURES OF THE SKULL.

es of the skull are not of themselves dangerous, nor
ous to the brain, if care be taken to prevent inflam-
danger is to be apprehended from compression of
ravasation of blood, or irritation in some distant

en called to a case of fracture of the skull, you do not ope-
er the symptoms that are present, endeavour to ascertain
arise, and then regulate your treatment accordingly; if the
hose of concussion, the treatment must be directed to it; if
sation of blood, and there is not much excitement, it will be
nove a portion of bone; but if there be fracture only, without
toms above-mentioned, there will be no occasion to operate.

a fracture occurs at the base of the skull, it is much
us than at any other part, because extravasation of

blood is much more likely to take place; or if not, inflammatio of the brain, from the violence of the injury received, very ofte supervenes.

Fractures of the base of the brain are produced by falling from a grea height on the summit of the head, when all the weight of the body rests o the foramen magnum and cuneiform process of the os occipitis.

3. The cranium may be fractured in very different ways; but there are two kinds, which require to be noticed on account of their characteristic symptoms.

First: if there is a transverse fracture through the foramen magnum, cuneiform process, and part of the temporal bone; a discharge of blood into each meatus auditorous takes place, and when there is no other mischief, deafness often remains for life.

Secondly: should the skull be fractured over the frontal sinuses, when the fracture is simple, if the nose be blown, the air escapes through the opening in the bone, and getting into the cellular membrane under the skin, renders the forehead emphysematous. If, on the other hand, the fracture is compound, upon blowing the nose, the air rushes through the wound.

4. Fractures of the skull, if unaccompanied with concussion or compression, as readily unite as fractures of the bones in an part of the body.

When large holes are made through the skull, (as in trephining,) th apertures do not again become filled with ossific matter, but by a tendinou structure formed from the bone and dura mater. When the bones of th skull, in fractures, are widely separated, the interspace will not becom filled by bony matter, but remain open.

5. *Treatment:*—The treatment of fractures of the skull wil depend, more or less, on the symptoms which present themselves.

6. In the first place, when there is a *simple* or *compound* fracture, unaccompanied with symptoms of injury to the brain, yo must not trephine.

7. In these cases, let your treatment be constitutional depleion, by means of blood-letting and purgatives; and if there is a round in the scalp, endeavour to heal it as quickly as possible by e application of adhesive plasters.

This plan often removes symptoms of concussion, and even extravasation, ich accompany these fractures; and frequently a few hours will shew you at the application of the trephine, which you at first might have thought dispensable, is wholly unnecessary.

8. In the second place, when there is *fracture with depresn*, the treatment must differ according as the case is simple compound.

9. Before speaking of the treatment for fractures with deession, there are one or two injuries of the head, which it is cessary should be borne in mind, to direct your diagnosis on ing called to accidents of the kind.

Sometimes a person receives a blow on the scalp; the parts immediately rounding the spot where the blow was received, will rise (from the ravasation of blood) two or three lines higher than the part itself; for re, the cellular membrane, having been condensed by the injury, will ewise tend to increase the deception: thus the surrounding parts are siderably higher than the middle, and the external character of the tusion is certainly calculated to deceive.

Again, it very often happens in fractures of the cranium, that considere depression of bone will take place, from the external table of the skull ng driven into the diploe, and without producing the slightest injury to internal table; these fractures, however, can only occur in those of middle age, for, in the very young, and in very old age, the skull is thin d without diploe.

10. These cases sufficiently shew that you ought not to be too ecipitate in your diagnosis, nor hastily determine upon perrming an operation, which you might afterwards have reason repent.

11. To return to the subject of *fracture with depres* If the fracture *is simple*, and there is no wound in the sc and no symptoms of injury to the brain, you must not trepl Even if there are symptoms of injury to the brain, and fracture is simple, do not immediately trephine: take a blood, and purge your patient freely, and see how far the sy toms may be the result of concussion of the brain, and nc depression.

Inflammation rarely follows a simple fracture with depression, but often follows a compound fracture; you must therefore be very cautio rendering a simple fracture compound by the operation of trephining.

12. When *fracture with depression* is of *the comp* *nature*, you should immediately trephine or elevate the pressed portion of the bone, for as these cases are usuall tended with inflammation, you must not wait till the inflan tory symptoms come on, but at once proceed to remove cause of depression.

If inflammation comes on, the patient will die, whether you opera not, and you will be so far from arresting its fatal progress by trephi that you only will be adding to the danger.

13. Inflammation does not uniformly follow compound tures with depression, but it is always advisable to secure life of our patient by operating.

The rule, therefore, which I always follow, is this:—When I am c to a fracture, with depression, which is exposed to view, I generally u elevator, and very rarely the trephine. I put this under the bone, ra up, and if it has been comminuted, remove the small portions of bone however, one bone is wedged within the other, I apply the trephin raising the depressed portion of the bone. The elevation of the bo never followed by any mischief; but if you do not raise it, and inflamm follows, it will be too late to attempt to save the life of the patient.

14. It sometimes happens, in fracture of the skull, atte

with depression, that a small spicular portion of the bone will project into the brain, so as to produce and support epileptic symptoms, but let this be removed, and the symptoms will subside.

WOUNDS OF THE BRAIN.

1. Wounds of the brain will often happen without producing any interruption to the operations of either the mind or body. But should the wound be accompanied by compression or concussion, then the particular symptoms which characterize those injuries, will be present.

If the wound is a simple incision or laceration, it will prove quite harmless. Indeed, it frequently occurs that considerable portions of the brain are lost, and yet the mental and bodily functions continue unimpaired. Epileptic fits and hemiplegia certainly sometimes follow these injuries.

2. It occasionally happens, when a portion of brain has been lost, that a piece of the cranium will, by being driven in, occupy its place.

If in these cases, no symptoms of compression manifest themselves, you must not elevate the depressed bone; for were you to do so, you would, in all probability, give rise to extravasation, or increase the hazard of inflammation.

3. The danger attending injuries of the brain, arises principally from two causes; the formation of fungus, and from inflammation.

4. *Fungus:*—When the brain receives a wound, you must commence your curative exertions, by abstracting as large a quantity of blood from the system as the constitution of your

patient will bear; not, however, to such an extent as to pr the restorative operations of nature. After some days have ela the divided parts begin to unite by means of the adhesive inflar tion; but if this process cannot effect a cure, granulations f which at length project through the opening in the skull, give rise to fungus.

5. When this is the case, the safety of your patient wil pend on the treatment you adopt; for if you do not repres growth of the fungus until the dura mater heals over it, t will be violent constitutional irritation, and the life of the pa in jeopardy; but, on the contrary, if you attend to the cond of the wound, and prevent the fungus from rising, there wil comparatively speaking, but little danger.

Your treatment should be as follows:—Apply to the fungus a piece o wetted with liquor calcis, and over this, strapping of adhesive plaster; you examine the part on the following day, you will find the fungus siderably diminished; you are then to use a thicker piece of lint, an strapping as before; you must pursue this plan until you have succeed getting it even with the dura mater, in which position it must be cauti preserved; when, at last, the dura mater heals over it, and your obj accomplished.

6. *Inflammation:*—Wounds of the brain are dangerous t the inflammation which supervenes, and which danger is increa if the dura mater is the part attacked. When inflammation att the membranes, symptoms of irritation will be present: but i brain itself, they will be those of compression.

The ordinary symptoms are, great pain in the head; the scalp œdem round the external wound; the edges of the wound have a shining, g appearance; and there is a discharge from the wound itself, compos serum and blood; sometimes the parts about the wound have a slo appearance; the countenance is very much flushed, and the carotid art beat with very great force; there are very frequent rigors; somet hemiplegia; and the patient very quickly falls into a comatose state.

ammation of the brain is more slow in its occurrence jury, than inflammation after an injury of another part. lly about a week before it comes on; very rarely under

appens that inflammation of the brain does not come on till a even three weeks after the injury; you must, therefore, be uard, as your patient is not out of danger until that length of sed, and sometimes, not even then.

tment.—This is the same as for inflammation generally, exception only; that blood should be drawn from the rtery in adults, and the jugular vein in children. In this rule, you must purge, produce perspiration, and rs to the head.

n poultices, containing some stimulating application, of consi-

n inflammation terminates in suppuration, the matter uated between the dura mater and skull, pia mater, hnoides and brain, and lastly, in the substance of the

st:—When pus is situated between the dura mater and ugh this is very seldom the case,) trephining for its re-uld be attended with complete success; but the chances it there are against you, as it is generally situated be-pia mater and surface of the brain, for which an opera-be worse than useless.

condly:—When matter is situated between the pia brain itself, it is diffused over the hemispheres of the hat it will be of no use to operate, as very little will be , there being no communication between one part and another; for the matter is contained in distinct cells, b vessels which come from the pia mater to the brain.

12. Lastly:—Matter may form in various parts of itself, and instead of being attended with symptoms of they are rather those of compression.

TREPHINING.

1. This was formerly an operation requiring seve ments, but as it is now performed, three are quite su

A knife, with a double edge, in order to scrape off the peri elevator; and a trephine having a crown, and a pin which w being easily moved.

2. Trephining, though by no means so frequently r or so badly conducted as in former days, is neverthel considerable danger, and ought not to be performed case absolutely demands it.

It is in fact, one of the most dangerous operations in surgery forming it, there is but a single step, a small net-work, between and eternity; saw through this, and destruction of life will gen consequence.

3. This operation must never be performed whe would be laid open, or, in any other place where an part would be exposed to injury.

First:—You should never trephine in the course of the longit or the line that extends from just above the nose, along the top to the tuberosity of the occiput. Secondly:—Over the fro Thirdly:—Over the anterior inferior angle of the parietal bon the zygoma, on account of the great artery of the dura mater. And lastly: —Behind the ears, on the posterior inferior angle of the same bone, lest you should lay open the great lateral sinus. Fractured portions of these bones may be raised by the elevator; and I may observe here, that this is the instrument chiefly used in cases where the fractures are running in the direction of these parts.

4. In performing this operation, a crucial incision is to be made, and the integuments turned aside; then cut through the pericranium, and scrape it off: this done, apply the trephine (taking care the pin is moved as soon as a circle is made, which in young persons will be requisite very early, because the bone is readily sawn through) and take care you do not injure the dura mater. After you have perforated the skull, the elevator should be introduced, to raise the depressed bone, and in this way return it to its natural situation. When the operation is finished, the scalp is to be laid down in its natural position, and dressed very slightly with a pledget of any simple bland ointment.

When operating on living subjects, you are informed of the progress you are making, by blood issuing from the wound when you reach the diploe; and when you see the blood, you will know you are half way through: but, recollect, in very young and old persons, there is no diploe; therefore, very few turns of the saw will do. When you find you have sawn through one part, introduce the elevator, and lift the portion of bone, the parts not cut through, being easily broken; and the bone may thus be safely removed without wounding the dura mater.

5. When the dura mater is wounded in this operation, the patient very rarely recovers; but if the dura mater and pia mater are both injured, the danger is less: in the former case there will be excessive inflammation; whereas, in the latter, a fungus immediately projects and fills up the cavity.

6. If the whole depressed portion of bone cannot be raised, or all the blood or matter cannot be discharged, by making one

perforation, the operation must be repeated, and as often as the case may require.

Removing large portions of the skull, however, should always be avoided, if possible, because it may be itself the source of bad and even fatal consequences; but it is certainly less dangerous, than not completely removing the pressure from the surface of the brain.

7. The operation in question, we have observed, is not always necessary; but there are four circumstances when it becomes requisite.

8. First:—When there is extravasation of blood between the dura mater and skull.

9. Secondly:—In compound fracture with depression, *unaccompanied* with symptoms of compression.

10. Thirdly:—In simple fractures, with depression and symptoms of compression continuing after depletion.

11. And lastly:—It is sometimes required that an opening should be made in the cranium, when there is matter between the dura mater and skull.

Now it generally happens in this last case, where there is matter between the dura mater and skull, that there is fracture, and this is an indication that some injury has been done to the brain, when it is also followed by rigors and other symptoms: still it will be right, in some cases where there is no fracture, and the other symptoms, rigors, &c. are present, to penetrate the bone, to see whether matter is lodged between it and the dura mater; and this is the only case in which it is proper.

WOUNDS OF THE SCALP.

Simple wounds of the scalp, without injury to the skull,
erally unite, as other wounds, without any peculiar con-
nal derangement.

be as well, however, to remark here, that wounds of the head are
quently followed by erysipelas; a circumstance explained by Petit,
and Bichat, by the supposition that they often disorder the hepatic
, and thus produce a state of the constitution favourable to its
ce.

ontused and lacerated wounds of the scalp, though not so
ealed, may, nevertheless be frequently united without much

ps, angles, and detached portions of these wounds, provided they
ected with the rest of the scalp at some point or other, ought never
oved, so as to cause an unnecessary exposure of the cranium; on
ary, they ought to be carefully laid down, and, when not too se-
ntused, they will be found to unite and do well.

Vounds of the scalp are not always devoid of danger, for
e two ways in which they occasionally prove destructive
first, by producing erysipelas; and secondly, by producing
ation of the tendon of the occipito-frontalis.

Vhen inflammation attacks the tendon of the occipito-
s, it extends over the scalp and face, and assumes an ery-
us character, but it is not true erysipelas.

not the vesicles which commonly attend erysipelas, but it has a ten-
ther to suppuration; and if the constitution has the strength to pro-
suppuration, it takes place between the tendon and the pericranium.
ray, a very extensive abscess is often formed, into which we are

obliged to make an incision, in order to discharge the matter, which ca make its way through the tendon.

5. Erysipelas, in cases of wounds of the scalp, has been er neously imputed to an injury of the aponeurosis of the occip frontalis muscle and pericranium; but it does not, in point reality, arise from this cause.

Whatever may be the precise inducing cause of erysipelas in these ca your treatment must be the same as is ordinarily recommended for erysip generally, with the exception that if there is much inflammatory ac about the wound, mild diet, and a mild depleting plan of medicine woul better calculated.

6. Finding, therefore, wounds in the scalp may be atten with considerable hazard, you will be convinced of the imp priety of making incisions in this part, merely for the sake of ploring the nature of an injury.

INJURIES OF THE SPINE.

1. Injuries of the spine produce effects similar to those ari from injuries of the head; the spine being liable to *concuss* *extravasation*, and *fracture with depression*.

2. *Concussion*:—Cases of concussion of the spine are not unfrequent; and most commonly occur in the lumbar region violent blow on the loins will produce paralysis of the lower tremities. The paralysis, however, is not complete; the pe is unable to support his body, but generally some power of mo *his limbs* remains.

This paralytic state, arising from a blow on the loins, is in general easily removed. You apply cupping-glasses to the part, and take away blood from it several times with the scarificator. If at the end of a week or ten days, the paralytic state still continues, you must apply a blister to the loins, and keep it dressed with equal parts of the unguentum lyttæ and unguentum sabinæ. The lyttæ being in this way absorbed into the constitution, diminishes the disposition to paralysis, while the counter-irritation also produces good effects.

3. *Extravasation:*—In cases of considerable extravasation, I do not know what can be done, except to bleed in the first instance, in order to prevent further extravasation; and afterwards to produce absorption, and excite counter irritation by the application of blisters.

These are cases of too rare occurrence to enable us to lay down any positive principle as to the mode in which they are to be treated.

4. *Fracture with depression:*—Fractures with displacement of the spine, are by no means uncommon accidents.

They have been improperly called *dislocations*; but dislocations of the spine are extremely rare, and only occur in the cervical vertebræ. They are, in fact, fracture with displacement; not one vertebra separating from another, but a fracture through the vertebra, and consequent depression of the spinal chord.

5. When fracture with displacement of the spine occurs, *paralysis* takes place in the parts of the body below the injury.

6. If it occur in the *loins*, paralysis of the lower extremities follows; the power of retaining the fæces, and of expelling the urine, is lost.

7. When the injury is in the *dorsal* vertebræ, there are the same symptoms as I have just mentioned, with this addition, that they are accompanied with considerable inflation of the abdomen.

This inflation might lead you, at first, to suppose there was some rupture of the intestines; but after a few hours, when the patient has bad free evacuations, this inflated state of the intestines disappears. The inflation is produced by the great secretion of air into the intestines, in consequence of the diminished powers of the part.

8. When the injury occurs in the lower parts of the *cervical* vertebræ, paralysis takes place in the upper as well as the lower extremities, though not in the same degree.

There is a numbness of the upper extremities, but seldom such a degree of paralysis as to deprive the patient of all power, when the injury occurs *below* the fourth cervical.

9. The time in which the person dies from these injuries, varies according to the seat of the accident, as being far or distant from the head.

If it occur in the loins, the patient will generally die in from five to six weeks:—if in the dorsal vertebræ, a much shorter time;—when between the fourth and seventh cervical vertebræ, in four or five days; and if the injury is between the second and fourth cervical vertebræ, the person dies on the instant, because it is above the origin of the phrenic nerve.

10. With respect to the treatment of fracture, with displacement of the spine, nothing hitherto has been effectually done in surgery. The removal of the displaced portion of vertebra has been attempted, but without success.

If you should meet with a case of fracture with displacement, and the urgency of symptoms great, I should recommend the removal of the depressed portion of bone; but if the injury is not so severe as to require an operation, your best plan is to place the patient on the *fracture bed* recommended by Mr. Amesbury. With this convenient apparatus, your patient may lie on his back, undisturbed for any length of time; a trap portion of the mattress being left for the passage of the fæces, as also one allowing local applications to the part affected. Every other necessary attention, as to diet, and so on, must be assiduously given. By pursuing this mode of treatment, the injury, in some instances, may be gradually overcome, and the person ultimately restored to health and vigour.

ANEURISM.

1. Aneurism is a pulsating tumour containing blood, and com- unicating with the interior of an artery.

There is one exception to this definition, namely, where aneurism, as it metimes happens, takes place in the heart.

2. Aneurisms are situated either externally or internally.

That is, they are either so situated on the limbs, as that access may be had them, and the nature of the disease clearly ascertained; or they are so aced in cavities of the body, such as the abdomen, chest, and cranium, as render the nature of the disease very often extremely doubtful.

3. *External Aneurisms:*—In external aneurisms, the symptoms ay be divided into the first, second, and third stages.

4. First:—There is a small tumour, pulsating very strongly, d as it contains only fluid blood, if you apply your finger to the ery between the aneurism and the heart, you will readily empty aneurismal bag, by pressure.

n this state there is scarcely any pain, and no other alteration in the limb, a some irregularity of circulation, producing spasm in the muscle; and n the patient is going to rest, cramps in the leg, and sudden twitchings ch prevent him from sleeping.

. Second:—In this stage we find the blood is beginning to gulate in the interior of the sac, the coats of which are very terially thickened.

t this time, if you press on the artery, you may empty the sac in part; will see the swelling re-produced when you take off the pressure. You not completely empty the bag by pressure, for a considerable degree of *ling will still remain. There is* some degree of pain below, and the circulation is retarded in consequence of the pressure on the surrounding parts. The aneurism becomes a solid swelling, instead of a mere bag containing fluid.

6. Third:—When an aneurism reaches its third stage, it has acquired considerable magnitude, and the pulsation is in a degree lost, or seldom perceived over the whole swelling. A small portion of the blood still remains in a fluid state, but the greater part of it is filled with coagulum. Finally, the aneurismal sac bursts, and the patient sinks from repeated hemorrhage or gangrene.

When the third stage has commenced, the swelling gradually increases, and the aneurism becomes of a dark colour; inflammation of the cuticle ensues, vesication of the cutis to the size of half-a-crown, takes place, and the skin in this part is quite insensible. In a few days an eschar is formed, a small wound takes place, and blood issues from the part; lint is applied to the wound, and the hemorrhage is stopped; but as the eschar proceeds, and the size of the wound increases, the hemorrhage returns; and thus by repeated bleedings, destruction of life is produced.

7. *Internal Aneurisms:*—The symptoms of these cases will vary according to the seat in which the disease is found; the digestive organs will be in fault at one time, the urinary at another, according to the part on which the aneurismal tumour presses.

8. *Causes:*—In many instances it is difficult to assign any cause for the commencement of aneurism; but among the circumstances which predispose to the complaint, the large size of the vessels may undoubtedly be reckoned.

Those trunks which are near the heart are said to have much thinner parietes, in relation to the magnitude of the column of blood, with which they are filled, than the arteries of smaller diameter; and since the lateral pressure of this fluid against the sides of the arteries, is in a ratio to the magnitude of these vessels, it follows, that aneurisms must be more frequent in the trunks near the heart, than in such as are remote from the source of the circulation.

). The curvatures of the arteries are also a presumed predis- ing cause of the disease: as also are several other circumstances ecessary to detail.

ccording to some surgical writers, the causes of aneurisms operate either reakening the arterial parietes, or by increasing the lateral impulse of d against the sides of these vessels. Thus they are said to be occasioned iolent concussions, the abuse of spirituous drinks, frequent mercurial ses, fits of anger, rough exercise, exertions in lifting heavy weights, and n.

0. In some persons, aneurisms appear to depend upon a par- ılar organic disposition.

his has been, in a few instances, particularly noticed, for although the erality of persons who are afflicted with aneurism, have but one, Sir A. per speaks of a case where there were seven aneurismal tumours, at erent parts.

11. Males are more subject to aneurisms than females, and ales more subject to internal aneurisms than external.

he age at which aneurism generally occurs, is from thirty to fifty; at t age exercise is considerable, and strength less.

12. *Formation:*—Every aneurism was formerly supposed to produced by the dilatation of the coats of the artery; but this ot always the case, for they are generally the fruit of absorp- n of the internal coats.

irst, the artery becomes opaque, and slightly inflamed; a small yellow t appears in the part where the aneurism is afterwards formed, and re is a slight efflorescence surrounding it. The process of absorption rwards takes place, and thins the coat of the artery so that the texture omes like that of a fine web. At the same time that this takes place, ure begins to set up a process of defence, a coat of adhesive matter is own out, and thus a covering is produced which shuts up the artery, so as prevent the immediate escape of the blood. As the coat of the artery omes absorbed, the cellular membrane is glued by this matter to the outer face of the artery. The surrounding parts then become absorbed, until re is no longer any thing to prevent destructive hemorrhage.

13. Although aneurisms are generally produced by absorption, they are sometimes formed by dilatation, and are now and then the effect of the bursting of an artery.

A pointed body introduced into an artery will produce all the appearances of aneurism, *(aneurismal varix,)* and require the same treatment. In short, however aneurism may be produced, the surgical treatment will be the same.

14. *Diagnosis:*—Aneurismal tumours may be known by the pulsation being perceptible over every part; whereas, in tumours which derive their pulsation from being situated over an artery, it is only to be felt in the direction of the vessel.

Also, if the aneurism be recent, by pressing your finger on the artery which leads to the aneurism, you will empty the aneurismal bag; but if the aneurism be of long duration, and the pulsation is but slight, place yourself by the side of the patient, observe carefully the size of the swelling, and, by pressing your finger on the artery above, you will see the aneurism sink down as you make the pressure, though the sac will not entirely empty itself; and upon raising your hand suddenly, you will observe a jet of blood rush into the aneurismal sac, and raise it to its former height.

15. Some aneurisms are local, and others general; when they occur in the ham, they are frequently only local; but when between the groin and ham, or in the middle of the thigh, you very commonly find disease of other arteries.

A knowledge of this circumstance should lead you to attend to your patient before you operate, lest he may afterwards sink from internal aneurism.

16. *Prognosis:*—Your opinion of the probable termination of these cases, must vary according to a variety of circumstances. The disease may generally be considered as exceedingly dangerous; for if left to itself, it almost always terminates in rupture, and the patient dies of hemorrhage.

There are some examples, however, in which a spontaneous cure took

·ismal swellings have been known to lose their pulsation, aller, and gradually reduced to an indolent tubercle, which ›peared.

ıneurism, so situated that it can neither be com- ed above the swelling, is for the most part incur-

e, constitution, and state of the patient's health, :onsidered in the prognosis, for they undoubtedly ifference in the chance of success after the opera-

is not, however, to be set aside on account of the age of the the circumstances of the case in other respects appear to has been performed favourably on patients above sixty; by Sir A. Cooper, as late as eighty-five.

neous cure:—The obliteration of the sac, in con- lisposition of the lamellated coagulum in its cavity, which the spontaneous cure of aneurism is in most :ed.

ıces a stratum of coagulum is deposited upon the inner sur- .nd successive depositions of the fibrous part of the blood, ı the cavity of the tumour. At length, the sac becomes en- his substance, and the deposition of it generally continues both sides of the sac, as far as the giving off of the next The circulation through the vessel is thus prevented; the by collateral channels; and another process is instituted, of the tumour is removed.

mes an aneurism is deeply attacked with inflam- ıngrene; a dense, compact, bloody coagulum is the vessel, shutting up its canal, and completely .e course of the blood into the tumour.

ı of this kind, the ensuing sphacelation and bursting of the aneurismal sac, are never accompanied by a fatal hemorr-

hage; and the patient is cured of the gangrene and aneurism, i strength sufficient to bear the attending derangement.

21. Another mode in which the disease is spontaneousl is the tumour pressing on the artery above, so as to produc sion of its sides, and thus cutting off the supply of blood aneurismal sac.

Other processes of spontaneous cure are mentioned by different but of too rare an occurrence to require mentioning in the present t

22. *General Treatment:*—In those cases where a spon cure cannot be anticipated, and the urgency of the sy imperative, you must give your attention to an appropriate and surgical plan of treatment.

23. In your medical treatment, do not keep your patie low, for you will thereby render them very irritable. Ble occasionally useful: strict attention is to be paid to the r and stimulants of every kind carefully avoided.

24. In your surgical treatment, some say, you mu two objects in view: either to attempt the curative pr the application of pressure on the artery, or aneurismal very small aneurisms, as of the temporal arteries; or, in larger aneurisms, to cut off the supply of blood, by takin nourishing artery.

From the cases which Sir A. Cooper has witnessed, the plan o on arteries he believes to be ineffectual, and therefore does not re its adoption.

25. The principle, however, on which external ar are usually cured, consists in preventing the entrance blood into the aneurismal sac.

ıen this is accomplished, the blood, already contained in the sac, is ıally absorbed, the sac itself contracts, the whole tumour diminishes, by degrees, the power of using the limb is restored.

5. The stoppage of the influx of blood into the sac, may etimes be fulfilled by the skilful application of pressure, partiırly while the aneurism is small, and its contents can be made ecede.

ıere are too few instances of cure by pressure to merit an unreserved ınce on this mode of treatment. If it is adopted, the customary rules be lessening and moderating of arterial action must also be attended to.

7. As pressure is by no means an effectual cure in these cases, ır final remedy must be the operation of tying the artery ich supplies the aneurism.

/e shall first make a few general remarks on operating for aneurism, and rwards speak of the aneurisms individually as they occur: with the tment necessary in each case.

8. The general rules to bear in mind in operations for urisms are, the manner and direction of your incision; the lication of the ligature; and the after-treatment of the pait.

9. The direction and extent of the incision must obviously end on the situation of the artery about to be operated on.

10. In the operation of taking up vessels, various sorts, and ny modes of applying ligatures, have been, at one time or other, use; but on the whole, rest assured, that the best manner of plying them is that now commonly adopted: tie a tight knot th a fine ligature, and then cut one end close to the vessel, and the other hang out of the wound.

If in the operation, the artery has been disturbed much from the surrounding cellular membrane, (for an inch or so,) apply two ligatures, and divide the artery in the centre, and there will then be room for the retraction of the artery; but if on the contrary, it has not been much disturbed, apply only the single ligature:—Broad ligatures must, on no account, be used, as they are very likely to produce constitutional irritation, and consequently, cause the parts to suffer for a great length of time.

31. When the operation is completed, you are to bring the integuments close together, by means of adhesive plaster, leaving, however, a small space between each, so that the matter may escape through the interstices: and the other after-treatment must entirely depend on existing circumstances.

If the operation performed, has interrupted the supply of blood to any limb, you must be particularly careful to preserve warmth, lest gangrene should ensue.

32. The time at which the ligature separates, is generally from the twelfth to the fourteenth day; but it is variable according to the kind of ligature used. If early inflammation comes on, the separation will be rapid; but if there be a broad ligature, and the inflammation indolent, it will be from twenty-five to thirty days.

If the ligature should come away without any hemorrhage, do not consider your patient safe; therefore, be on your guard, and let him remain quiet for two or three days afterwards.

ANEURISM OF THE HEART.

33. An aneurism of the heart consists of a bag formed out of the parietes of that organ, and in this bag an opening is formed, as in aneurisms which take place in arteries.

In these unhappy cases, the only course you can adopt, is to enjoin quietude, with mild and moderate diet.

ANEURISMS OF THE AORTA.

4. Aneurisms of the aorta, are disease of by no means unfre- nt occurrence; and are, indeed, most truly to be dreaded both he surgeon and the patient.

affliction, in fact, can be more deplorable; for, the sufferings which occasion, hardly ever admit of palliation, and the instances of recovery o very few, that no consolatory expectations can be indulged of avoiding atal end to which the disease naturally hastens.

. Aneurisms of the aorta vary in their situation; sometimes ng in one part, in other instances, at another; more fre- tly however, at the arch of the aorta.

Hunter was of opinion, that the frequency of the latter cases depended e forcible manner in which the blood must be driven against the angle curvature of the vessel.

. *Ascending Aorta:*—Aneurism of the ascending aorta, just e commencement, where it is covered by the pericardium, is of unfrequent occurrence.

. *Curvature of the Aorta:*—Aneurisms in this part, are, as ave before mentioned, very frequent. They are to be seen above the sternum, and are very liable to be mistaken for rism of the subclavian artery.

e termination of existence from these cases is very different. Some- they cause, by their pressure, dyspnœa and suffocation; sometimes press behind on the œsophagus, instead of in the front, on the sternum. me cases, the swelling bursts into the cavity of the chest, and the at drops suddenly down. In other examples, the blood is effused into trachea, or bronchia, and the patient, after violent coughings and loss of blood from the mouth, expires. These are among a variety of inations; to guard against which nothing more can be done than rest, mild and moderate diet.

38. *Arteria Innominata:*—Aneurisms of this vessel, do in general, allow of an operation being performed; there i room for the ligature.

Dr. Mott, of America, has put a ligature on this vessel; and, for a t the patient appeared to be doing well, but he afterwards died.

39. *Descending Aorta:*—When the descending aorta is subject of aneurism, in its course through the posterior medi num, it very often presses on the œsophagus, adhesion of the of the sac to the œsophagus takes place, and afterwards an o ing between the aneurismal bag and gullet is formed; the pat vomits a considerable quantity of blood, and soon expires.

It is as well to observe here, that aneurisms of the thoracic aort scarcely ever known with certainty, before they have advanced so far be attended with an external pulsation, and a tumour that admits of l felt, or even seen.

40. *Abdominal Aorta:*—Aneurisms are not unfrequen different parts of the aorta below the diaphragm; and accor to their situation, so will the symptoms, more or less, cha terize their position.

There are two or three instances, which, it may be deemed essent speak of in particular, as the diagnosis in similar cases will therel rendered more certain.

41. First, when the aneurism is situated above the co artery, a pulsation may be distinctly felt at the scrobic cordis:—Secondly, when it is lower down in the cavity of abdomen, it often bursts into the intestines:—And in the t case, if the tumour presses on the spine, absorption of vertebræ takes place.

In the first case you may know the complaint by the aneurismal tu pressing on the stomach, producing nausea and vomiting, and the i *diate ejection* of small quantities of food.

he last case, in addition to what is mentioned in the paragraph, you also find a large swelling in the loins; but these tumours have no rnible pulsation, owing to their distance from the aorta.

!. Aneurisms of the abdominal aorta, like those of the acic aorta, are formidable diseases, leaving scarcely a hope lleviation, much less of a cure.

derate the force of the circulation by gentle bleeding and low diet; l every thing that has a tendency to heat the body, or quicken the n of the blood; keep the bowels open with laxative medicine, and n pain by the use of sedatives.

3. *Tying the Aorta:*—The securing of the abdominal aorta ve once attempted, and from the promises of success which ve observed after the operation, I should feel myself autho- l to attempt it a second time.

the case I have had an opportunity of giving it a trial, I commenced ncision in the linea alba, two inches above the umbilicus, and carried it e same distance below, taking care in my descent, to avoid the umbi- , by giving it a semilunar turn or curve. My finger was easily passed to the artery, and the vessel secured without difficulty. The principal er does not appear to be from gangrene, nor is any thing to be appre- ed as far as regards the carrying on the circulation, for that will be ted by anastomosing vessels. The danger in part consists in including nerves in the ligature (which must be cautiously avoided) but more ially from the irritation produced in the intestines by the ligature, for that reason, if I was ever called upon to repeat the operation, I d cut the ligature close to the vessel, where it should take its chance, r to become encysted or absorbed.

PELVIC, ISCHIATIC, AND GLUTEAL ANEURISMS.

l. Aneurisms sometimes form in the cavity of the pelvis, he ischiatic notch, and under the gluteus maximus muscle. s last circumstance should put you on your guard when you tumours on the nates.

45. In cases of gluteal aneurism, or in wounds of the gluteal artery, the operation of securing the vessel should be performed.

In those cases where the ischiatic portion, or the pelvic arteries, are the seat of disease, it has been recommended also to put a ligature, if practicable, on the nourishing vessel.

46. *Internal Iliac Artery:*—The operation of taking up this artery is one of extraordinary difficulty. It is only necessary for an aneurism of the gluteal artery, just at its commencement, so that it cannot be reached under the gluteal muscle.

You make an incision on the inner side of the spine of the ilium, by which you cut through the abdominal muscles, and reach the peritoneum: this you turn to the opposite side, in order that the artery may be reached. In putting your ligature on the vessel, be particularly careful lest you include the ureter, which crosses the internal iliac at the bifurcation, and thus cause the destruction of life. The after management is the same as for aneurisms in general.

POPLITEAL ANEURISM.

47. Popliteal aneurism, as its name implies, is situated in the popliteal space of the ham; it is the most common external one, and is characterized by the symptoms lately drawn (Par. 6.) in illustration of external aneurisms.

Much has been said of the value of compression in some cases of popliteal aneurism, and the celebrated Scarpa, from his observations on the subject, has laid down certain rules, in which cases it might be used with advantage, and, on the other hand, where it would be injurious.

48. In this country, the aid of compression is scarcely, if ever resorted to, the operation of tying the nourishing artery, being the most effectual mode of treatment.

There are various sentiments on the precise spot where the vessel is best secured, for the effect, in respect to the primary indications which the sur-

geon proposes to accomplish, is the same, whether the artery be tied in the ham, a little above the breach in the vessel; whether the ligature be applied on the inner side of the thigh, in the middle, or at the top of the thigh; that is to say, the flow of blood through the popliteal artery into the aneurismal sac being thereby intercepted, the obliteration of the cavity will supervene.

49. ***Femoral Artery:***—For the cure of popliteal aneurism, this artery was first secured in the middle of the thigh, by Mr. Hunter, and is the operation now generally practised.

Operation:—Put the sartorius muscle in action by placing the leg in the tailor's position; then make an incision three inches in length, rather above the middle of the thigh, in the oblique direction of the muscle, and on its inner edge; continue it through the integuments and fat, till the border of the muscle is exposed. Observe the direction of the fibres, to ascertain that you have not come upon the vastus, then elevate the sartorius, draw it a little outward, which brings the femoral sheath into view; open this with care by a small incision, and then dilate it, but cutting from within, *outwards:* this exposes the artery, which has the vein rather behind, and to its *inner* side. When the artery is secured, you are to bring the integuments close together by means of strips of adhesive plaster, leaving a small space between each, for the escape of matter. No bandage or roller should be applied; and as for the position of the limb, it should be placed on a pillow, and on its outer side, occasionally changing it so as to prevent pressure in any particular part.

It not unfrequently occurs, when there is aneurism of the popliteal artery, there will also be aneurism of the ascending aorta, therefore, in such cases, and in fact, always before operating for any aneurism, examine the patient, and see if there is pain and pulsation in any other part, as death may take place by the rupture of an internal aneurism, whilst you are performing it.

50. When the femoral artery has been tied, the circulation is carried on by the arteria profunda; from this, anastomosing vessels are sent off, which communicate with branches from the anterior tibial.

Owing to the difficulty which is at first given to the circulation of the member, in cold weather, and always if the temperature of the limb sinks after the operation, flannel should be applied; and pressure on the heel carefully avoided, less gangrene of that part should take place.

FEMORAL ANEURISMS.

51. It is not an uncommon occurrence to meet with an aneurism of the femoral artery just below Poupart's ligament.

Not many years ago, cases of this description were deemed incurable by any surgical operation; but it is now proved, that not only the securing the femoral artery above the profunda may be successfully attempted, but even the external iliac artery itself.

52. *External Iliac:*—The possibility of a cure for aneurism of the femoral artery high up, having been established, the tying of the external iliac artery is the operation to which we must refer.

Operation:—Begin the incision a little above the abdominal ring, and extend it, in the shape of a crescent, to the edge of Poupart's ligament, and then continue it to about an inch and a half from the inner spine of the ilium, where it terminates. By this incision I lay bare the tendon of the external oblique muscle: in the second, I divide this tendon and expose the internal oblique and transversalis muscles. The next step will be to raise the internal oblique and transversalis muscles from Poupart's ligament, by introducing the finger behind them; which done, you reach the passage of the spermatic cord; and then behind the pulsation of the iliac vessel. You now draw up the internal oblique, and transversalis muscles with the finger, at the same time elevating the spermatic cord a little, and then carry the finger into the abdomen, behind the peritoneum, and you ascertain the beating of the artery. Having found the artery, I put the aneurismal needle into the opening, and introduce it under the vessel; clear it a little from the surrounding parts, and take it up, carefully avoiding the vein. If the artery should be much exposed (as an inch and a half), two ligatures must be used; but if a small portion only, the single ligature. When you use two ligatures, you will separate them from each other, drawing one upward, and the other downward, and leaving about three-quarters of an inch of the vessel exposed at the extremity of each ligature; for if this is not done, on dividing the artery, there will be danger of the ligatures slipping off. The instrument with which the artery is usually divided, is the probe-pointed bistoury; when it is done, retraction of the vessels immediately takes place. There will be no danger in including the nerve in the ligature, as the *anterior* crural does not accompany it; the vein and the artery are included the sheath, and the nerve is on the *outer* side. Lastly, the edges of the und are to be brought together, and the case treated in the usual way.

53. After the external iliac is tied, the circulation is princilly carried on by the gluteal; assisted by the ischiatic, the turator, and the external pubic.

The gluteal passes out through the ischiatic notch, comes over the ilium he groin, and enters the femoral artery a little below Poupart's ligament: The ischiatic arises from the termination of the internal iliac, passes out the pelvis between the trochanter major and tuberosity of the ischium to back of the thigh, and sends a few branches to the anterior profunda l external circumflex arteries:—The obturator passes out through the urator foramen and joins the internal circumflex artery:—And the exal pubic communicates freely with the internal pubic.

ANEURISMS OF THE LEG AND FOOT.

54. *Anterior and Posterior Tibial Arteries:*—The operation ich has been described for popliteal aneurism, is the one used r aneurisms situated at the upper part of these vessels; but the eration is not to be performed when the aneurism is near the ot, for in such cases, you must make an incision on the sac, and ply a ligature both above and below the aneurism.

55. Aneurisms of the instep and sole of the foot, as observed the celebrated Scarpa, have been found incurable by the ligature n the anterior tibial artery.

He thinks, however, that the operation of tying the artery where it passes er the dorsum of the foot might succeed, if aided by compression, applied as to stop the current through the other main channel: and he seems to pprove of this practice, because the plan of tying the artery above and low the disease could not be done without extensive incisions in the sole the foot.

ANEURISMS OF THE SCALP.

56. In these cases, if the aneurismal bag is not very large, you may cut immediately across it; apply a piece of doubled lint, then adhesive plaster, and over the whole a roller. If the swelling is small, (not larger than a walnut,) you should make a circular incision completely down to the occipito-frontalis tendon.

In this manner, the connection between the blood-vessels and the aneurism is destroyed; and, by applying a dossil of lint, and strips of adhesive plaster, you speedily succeed in getting rid of the disease.

CAROTID ANEURISMS.

57. Aneurisms of the carotid artery may not only undergo a spontaneous cure without any serious consequences to the brain; but the artery itself may be secure by ligature and the patient still do well.

Aneurism by anastamosis, situated in the orbit, antrum, and on other parts of the head, have been cured by the application of a ligature to the common carotid.

58. *Carotid Artery:*—In the operation of securing this artery, it is desirable to make the incision as high as you can; the upper boundary, therefore, will be the angle of the jaw, and below the omo-hyoideus.

Make your incision first, then high up, on the inner side of the sterno-cleido-mastoideus, upon drawing aside the edge of which, you will distinctly see the omo-hyoideus obliquely crossing the artery. In passing the ligature round the artery, if you raise it a little, you can readily discover whether the par vagum is in contact with it, and thus guard against an accident which might lead to a fatal result.

AXILLARY ANEURISMS.

There may happen cases of aneurism in the axilla when ration of securing the *subclavian artery* is rendered neces-

Various opinions have been entertained whether it is best ed above or below the clavicle. In ordinary instances, ooper considers the common mode of securing the vessel he most adviseable.

eration is as follows:—The middle of your incision should be op- the external jugular vein, and the centre of the clavicle; the parts osed are, the omo-hyoideus muscle, crossing obliquely above the below the sterno-mostoideus, upon the inner side, and the jugular sing immediately opposite to the centre of the opening. Soon after ing this operation, you will meet with branches of nerves from the lexus; you must carefully avoid including these in the ligature, for be a fatal error if you were to tie them. The scalenus anticus boundary of the artery on the inner side, you cut down for the f finding its inner edge; and this you will find a useful guide.

After the subclavian has been tied, the circulation is lly supported by the superior scapular.

BRACHIAL ANEURISMS, ETC.

Aneurismal tumours sometimes occur in the brachial ar- also in the arteries of the forearm and hand.

the securing of these vessels are more frequently required for han for aneurisms, the individual operations will be shortly l.

ANEURISMAL VARIX.

1. By *aneurismal varix, varicose* or *venous aneurism*, is meant, a tumour arising from a preternatural and direct communication, formed between a large vein and a subjacent artery.

Thus, in venesection, performed immediately over the artery at the bend of the elbow, if the lancet be carried too deeply, it may transfix the vein and wound the artery, in which event, the arterial blood, in consequence of the proximity of the two vessels, instead of being effused into the cellular substance, will pass directly into the cavity of the vein, which will become dilated in the form of a varix, and, consequently, constitute a *varicose aneurism*.

2. When an aneurismal varix at the bend of the arm, has been thus formed, let me recommend you not to cut down upon it in order to secure the vessel; rather tie the brachial artery at the middle of the arm, and not make an incision upon the swelling at the middle of the elbow.

To put a ligature upon the vessel here, amidst a mass of extravasated blood, is tedious, difficult, and dangerous.

HYDROCELE.

1. Hydrocele is an accumulation of water in the tunica vaginalis testis, and not between the tunica albuginea and the tunica vaginalis, as was formerly suspected.

2. Hydrocele may be of two kinds: first, of the tunica vaginalis; and the second, of the spermatic cord.

3. *Tunica Vaginalis* :—The swelling in hydrocele of the unica vaginalis, at first shows itself at the lower part of the rotum, and gradually rises till it arrives at the abdominal ring; of a pyriform shape; largest two-thirds of the way down-ards; a little less at the bottom; and smallest at the ring.

The common formation of hydrocele is unattended with pain, excepting wever, in those cases, where it has been the result of inflammation; but erally speaking there is no pain, and the patient accidentally discovers existence of the swelling, and often not until it has arrived at consider-e magnitude. Commonly there is no redness of the scrotum and no disco-ation.

4. The ordinary situation of the testicle in hydrocele, is two-irds of the way down the tumour, at the posterior part; but this respect it sometimes varies.

The testicle is sometimes found in the front; sometimes at the bottom, d at other times attached to both the anterior and posterior surfaces. These ieties are depending upon adhesion from inflammation before the col-tion of fluid.

5. The diagnostic marks of this disease are, its sense of ctuation, its transparency, lightness, form, freeness from in, and the history of the case.

Diseased testicle may be easily distinguished from hydrocele, by its weight d flatness, and the pain and sickness which it occasions; and from hæma-cele or a collection of blood, by the history of the case, and the latter im-ediately following the receipt of an injury.

In very old cases of hydrocele, and in persons who have long resided in t climates, the tunica vaginalis is much thickened, so that there occa-nally is great difficulty in detecting the transparency of the tumour.

6. The contents of hydrocele is usually yellow serum; which adually rises from the bottom of the tumour till it arrives at e abdominal ring; but this, however, is not always the case.

ometimes the water of hydrocele forms two swellings, one above the ring, l the other below, thus giving cause for the surgeon to suspect hernia,

and although the upper part dilates upon coughing, from the action of the abdominal muscles, its transparency and lightness will readily distinguish the complaint. There are also other variations in the disposition of the fluid in hydrocele.

7. *Congenital Hydrocele :*—In addition to hydrocele of the tunica vaginalis and spermatic cord, there is another variety, called the congenital hydrocele. It is in consequence of a communication having from birth existed between the tunica vaginalis and the cavity of the abdomen.

When the parts are natural and perfect, there is no opening leading from one to the other, as you know; but occasionally the natural closure does not take place, and then a fluid may descend from the abdomen, and collect in the tunica vaginalis.

8. Congenital hydrocele may be readily discovered from any other, in consequence of your being enabled, with ease, to return the water into the cavity of the abdomen, by placing the person upon his back, and then elevating the scrotum.

In these cases, I would recommend you to have a truss worn over the ring, until you have succeeded (by adhesion of the parts) in destroying the communication; and if the health is good, the water will become absorbed, and an operation unnecessary.

9. *Cause :*—The cause of hydrocele appears to depend upon increased secretion, as the vessels are dilated, though there is generally no inflammatory action.

Inflammation of the testicle will give rise to hydrocele; for as the inflammation disappears, hydrocele forms. This can generally be removed by exciting absorption; for which purpose, give Plummer's pills, and apply to the scrotum a lotion composed of the solution of acetate of ammonia, and muriate of ammonia. These means will be found to have considerable influence in hydrocele which results from inflammation, but in the other sort, they have none.

10. *Treatment :*—Hydrocele, if left to itself, will often un-

go spontaneous cure; but we are frequently called upon to a palliative treatment, by drawing the water off, and in some s, a radical or curative treatment, by the after-use of ulating injections or other means.

hen persons are afraid of the curative treatment, or when it would be ded with inconvenience, as also in old persons, the palliative will be nded; and insignificant as it may appear, it has been known to cause lestruction of life; I would therefore advise you, whenever you perform operation on old persons, to make them keep their beds for a few days wards.

1. In performing the operation, a trocar and canula are all is necessary;—whether you perform it for the palliative or ative treatment, remember that the testicle is usually two-ds of the way downwards at the posterior part; introduce trocar in the fore part *obliquely upwards*, indeed almost endicularly, to avoid wounding the testicle; withdraw the ar the instant you believe that the canula is within the tunica nalis; and once having the trocar in, take care to keep it e until the operation is concluded, by grasping the tumour he posterior part, so as to keep it tense where the trocar red.

you wish to accomplish this operation bloodlessly, to prevent internal ing, and the formation of hæmatocele, keep the patient at the time you oing it, in the erect position. There is no necessity for any after appli- a; on the following day, the wound will be well.

2. The palliative treatment is required to be repeated in pro- ion to the dropsical tendency existing in the person.

some it will be necessary once a month; in others, once in three months; enerally speaking, the usual time is every six months.

3. The radical cure of hydrocele is effected in three ways:— t, by absorption; secondly, by adhesion; and, thirdly, by ulation.

When hydrocele is produced in the common way, medicine or local applications have hardly any influence upon it; and when it arises from a relaxed state of the vessels, neither stimulants nor blisters will be of use.

14. In young persons and children you should not always perform the operation; but endeavour to occasion absorption of the fluid, by suspending the scrotum, and the use of internal and external stimulating remedies.

Calomel, scammony, and rhubarb, may be given internally; and the scrotum held in a suspensory bag, fastened by a tape round the abdomen, just below the umbilicus, and kept constantly wet by a stimulating lotion of muriate of ammonia with the solution of acetate of ammonia.

15. When cases of hydrocele do not yield to absorption, or are too far advanced to attempt it, your next resource is to endeavour a cure by the adhesion of the tunica vaginalis, and thus prevent the future collection of fluid. This is effected in three ways, either by a *seton*, *incision*, or by *injection*.

16. *Setons*:—Setons are very rarely used; but in young persons whose hydroceles do not give way to the absorbent plan before mentioned, rather than inject, use the seton; the thread should be allowed to remain for ten or fourteen days, till inflammation and the adhesive process is set up.

Operation:—Take a curved needle, armed with thread, and carry it into the tunica vaginalis and scrotum, just at the point where the trocar had been previously introduced, and include two inches above the point, where the needle enters, and bring it out sufficiently long; inflammation will generally ensue, and adhesion of the tunica vaginalis come on.

17. *Incision*:—If there is any suspicion of a disease of the testicle, you may use the incision, (except in old persons,) and when the opening is made, sprinkle some meal or flour into the wound, to prevent immediate adhesion, and to promote granulation.

ic, a stimulating fluid, for the promotion of adhesive
on.

inject for hydrocele, you should place the patient in the recum-
Before you introduce the trocar and canula, make it a rule to
crotum and tunica vaginalis, so as to make the part where the
distinct, very tense; then introduce them obliquely in the same
the palliative treatment. Having passed the trocar and canula
ca vaginalis, withdraw the trocar, and push the canula alone
wards, so as to prevent any injury to the testicles or spermatic
hould nip the tunica vaginalis round the canula, to guard against
nt being diverted, and thus throwing a portion of the fluid into
issue, thereby leading to destruction of life. Having taken this
ou are gradually to throw up the injection, turn the stop cock,
ne it in the tunica vaginalis, and move the scrotum from side
at the fluid may reach every part of the surface. It should be
main in for four or five minutes.
c bottle should be of a moderate size, and be furnished with a
d only half the quantity of fluid contained in it should be thrown
lest the action of the cremaster muscle should force a part of
llular tissue. If this happens, inflammation and sloughing may
round the part at which the canula is introduced.

e fluid used for injection should be of a stimulating
you use port wine, the proportion of wine and water
half and half; but the best injection you can use is

20. The pain from the injection will be greater or le
proportion to the irritability of the patient; and it may gene
be observed, that the degree of subsequent inflammation i
the inverse ratio of the pain suffered at the time.

If little pain is experienced, a considerable degree of inflammation wil
low; while on the contrary, where much pain is felt, it is generall
effect of nervous irritability, and little inflammation follows it.

21. It sometimes happens, in constitutions which ha
great disposition to inflammation, that the injection will ac
violently as to produce suppuration.

When there is danger of this, which you may ascertain by the great
and redness of the scrotum, make an incision with the lancet into the
and discharge the contents, and if the opening is not large, the cure wi
effected by the adhesive process.

22. When the fluid has been suffered to remain in the u
time, withdraw the instrument, and there will be no occa
for any application to the part. After a few hours have elap
inflammation will probably come on.

Let your patient walk about as usual in the course of the day, if he
but little pain: if much, tell him to lie down, take his dinner that day,
his glass of wine after it, if he has been in the habit of doing so. Sh
inflammation not come on from your remedies, you must take the pa
your hand, and touch it here and there until the patient feels a good de
pain. Then desire him to take a long walk, and an additional quanti
wine and water.

23. *Spermatic Cord:*—Hydrocele of the spermatic cord
be defined as a collection of water, which takes place in
tunica vaginalis, between the testicle and abdominal ring.

Sometimes the fluid extends above the ring, giving rise to the idea
being inguinal hernia; but you may judge of the nature of the tumour b
blue and semi-transparent appearance, by its being entirely unattended
pain, and by its not running into the abdomen, like inguinal hernia.

24. The best mode of treating this disease, is to make an incision in the tumour; introduce your finger into the sac, so as to ascertain that there is no communication with the abdomen, and then introduce a small quantity of flour to promote a slight internal irritation.

Injections in this situation would be attended with difficulty and danger; and in the above manner you may readily effect a cure.

HERNIA.

1. Hernia is a generic term, and is used to signify the protrusion of any viscus from its natural cavity; as of the abdomen, chest, &c.

Surgeons generally confine it to protrusions of the viscera from the cavity of the abdomen, as they are of the most frequent occurrence, and arise from the bulk of the parts contained in the abdomen, and the relaxation of its parietes.

2. There are a great variety of herniæ, according to the parts in which they occur, or according to their contents.

3. Herniæ most frequently make their appearance at the groin, the navel, the labium pudendi, and the upper and fore part of the thigh.

Inguinal Hernia is the name when a hernia protrudes at the abdominal ring, and only passes as low as the groin or labium pudendi; *Scrotal Hernia*, if the parts descend into the scrotum; *Femoral Hernia*, when it takes place below Poupart's ligament; *Umbilical Hernia*, when the bowels protrude at the navel; *Ventral Hernia*, when it occurs at any other promiscuous part of the front of the abdomen; *Congenital Hernia* is altogether a peculiar case, the description of which will be presently given.

4. From the contents of herniæ, they are said t enterocele, epiplocele, or entero-epiplocele.

Enterocele, if a portion of intestine alone forms the contents c *Epiplocele*, if a piece of omentum only; *Entero-epiplocele*, if and omentum.

5. In addition to the terms already explained as with the distinction of herniæ, they are likewise sa ducible, irreducible, and strangulated.

Reducible:—When the protruded bowels lie quietly in the s of being readily put back into the abdomen.

Irreducible:—When the protruded bowels suffer no constrict not be put back, owing to adhesions, or their large size in re aperture, through which they have to pass.

Strangulated:—Signifies one, which not only cannot be suffers constriction also; so that, if a piece of intestine be p pressure to which it is subjected, stops the passage of its content anus, excites inflammation of the bowels, and brings on a train and often fatal, consequences.

6. Having cursorily gone through the definitions we shall now treat of the causes, the symptoms, an of herniæ; the treatment of reducible herniæ in gener the irreducible; afterwards of the strangulated; an the individual cases.

CAUSES OF HERNIÆ.

7. The causes of herniæ, like those of other comp be either *predisposing* or *exciting*.

8. *Predisposing*:—The predisposing causes are of resistance which some parts of the abdominal p

o ; resulting either from relaxation, formation, or other-

t the principal, we might enumerate, a preternaturally large size of ngs, at which the bowels are likely to protrude; a weakness and of the margins of these apertures; a laxity of the peritoneum; an long mesentery or omentum.

xciting :—There are a numerous train of exciting causes ould be brought forward, but suffice it for the present to observe a few of the most frequent in occurrence.

nd exciting cause is the powerful action of the abdominal muscles ragm; to this might be added, accidental blows; great muscular pressure from obesity, or the wearing of tight clothes; pregnancy; le agitation of the body, as jumping, violent riding, &c.

SYMPTOMS OF HERNIÆ.

The common symptom of a hernia, which is reducible, from strangulations, is, an indolent tumour at some the abdomen, either making its appearance suddenly, ally preceded and accompanied by a train of symptoms.

elling is subject to a change of size, being smaller when the patient on his back, and larger when he stands up and holds his breath. ntly diminishes when pressed, and grows large again when the is removed. Its size and tenderness often increase after a meal, or patient is flatulent. Sometimes the functions of the viscera seem ittle or no interruption; at other times, in consequence of the untuation of the bowels, many patients with hernia are occasionally with colic, constipation, and vomiting.

If the case be an *enterocele*, or *intestinal hernia*, it is y characterized by the uniformity of its surface; its elasd other symptoms depending on the state of the parts.

the portion of intestine is small, the tumour is small in proportion;

but, though small, if the gut be distended with wind, inflamed, or have an degree of stricture made on it, it will be tense, resist the impression of the finger, and give pain on being handled. On the contrary, if there be no stricture, and the intestines suffer no degree of inflammation, let the prolapsed piece be of what length it may, and the tumour of whatever size, the tension will be little, and no pain will attend the handling of it; upon the patient's coughing, it will feel as if it were blown into; and, in general, it will be found very reducible. A gurgling noise is often made when the bowel is ascending.

12. If the hernia is an *epiplocele*, or one of the *omental* kind, the case is equally characterized.

The tumour has a more flabby, and a more unequal feel; it is in general perfectly indolent, is more compressible, and, if in the scrotum, is more oblong, and less round, than the swelling occasioned in the same situation by an intestinal hernia; and, if the quantity be large, and the patient an adult, it is, in some measure, distinguishable by its greater weight.

13. If the case is an *entero-epiplocele*, the characteristic marks will be less clear, being more or less accompanied with a combination of the symptoms which attend the simple cases.

As the smooth slippery surface of the intestine generally makes its reduction easier than that of omentum, Mr. Lawrence is of opinion, that, if a portion of the contents slip up quickly and with noise, leaving behind something which is less easily reduced, the case, in all probability, is an entero-epiplocele.

PROGNOSIS OF HERNIÆ.

14. On the subject of prognosis, Mr. Pott remarks, that the age and constitution of the subject, the date of the disease, its being free, or not free, from stricture or inflammation, the symptoms which accompany it, and the probability or improbability of its being returnable, naturally produce much variety.

Sir A. Cooper has observed that the danger of hernia is in proportion to *the smallness* of its size.

f the hernia is large, it is more readily returned into the abdomen; it is ely strangulated; and if strangulated, it is more easily reducible. If, on contrary, the hernia is very small, the ring through which it passes being remely narrow, the protruded parts are very tightly embraced, the hernia ery liable to strangulation, and in this state is rarely reducible.

TREATMENT OF HERNIÆ.

BIBLIOTHECA BODLEIANA

15. The treatment of herniæ must necessarily depend on the cumstances of their being *reducible*, *irreducible*, or *strangulated.*

TREATMENT OF REDUCIBLE HERNIÆ.

16. When you meet with cases of reducible herniæ, your atment must be the immediate return of the tumour, and erwards use such means as will be likely to prevent a recurice of the complaint.

s soon as the parts are returned, an appropriate truss should be put on l worn without remission. The surgeon should also be careful that equal ssure on the part is secured; and the patient be desired to keep the parts an.

17. Although many persons are accustomed to frequent niæ, which are spontaneously or readily reduced in the supine sture, they should be informed, that, by neglect, they are in ger of bringing on such a state of the complaint, as may put m into hazard, and perhaps destroy life.

t is, therefore, always advisable, for persons subject to reducible hernia, ear a truss; this, moreover, should be well made, and properly fitted to mouth of the sac, for as in these cases, the opening in the tendon is lly both large and lax, and the parts having been used to descend gh them, if the pad of the truss be not placed right, and there be not a

due degree of elasticity in the spring, a piece of intestine will, in some po ture, slip down behind it, and render the truss productive of that very ki of mischief it ought to prevent.

TREATMENT OF IRREDUCIBLE HERNIÆ.

18. The most frequent causes which prevent the ordina reduction of herniæ, may be considered, either the largeness o the contents, an alteration made in their form and texture adhesion of parts, and transverse membranous bands within the sac.

In addition to these causes, there are occasionally others, but of to unfrequent occurrence to require naming in a Manual of Surgery.

19. With respect to the treatment of irreducible herniæ, very little can be said.

You must first adopt the gradual steps recommended previous to a operation for strangulated hernia, and if you fail in returning the tumour, and no unpleasant symptoms attend the case, you can only advise the part to be worn in a suspensory bandage, to prevent an increase of the malady.

TREATMENT OF STRANGULATED HERNIÆ.

20. The indication of a strangulated hernia, is a tumour in the situation of the rupture, attended with pain, not only in the part, but all over the belly; sickness and inclination to vomit; suppression of stools, and some degree of fever.

If the reduction be delayed, the vomiting becomes more frequent; all the contents of the stomach, and afterwards those of the bowels, down to the stricture, being rejected. There is a great anxiety and restlessness, with a small, quick, and hard pulse, and cold extremities. After a time, hiccough comes on, the pulse is hardly perceptible, respiration weak, and the whole body covered with a cold clammy sweat. Mortification now takes place

the protruded viscera, and extending to the containing and
; parts. The patient suddenly becomes easy, the swelling of
bsides, and the tumour of the part diminishes, and the skin
ometimes changes its natural colour for a livid hue. Whether
ses its colour, it has an emphysematous feel, or crepitus to the
crepitus is the sure indication of gangrenous mischief within.
the gut goes up spontaneously, or is returned with the smallest
ressure; a discharge is made by stool, and the patient fancies
r. This feeling, however, is of short duration, hiccough and the
increase, convulsive symptoms come on, and the patient soon

e difficulty of returning a hernial tumour may be owing
causes; resulting either from its contents or the state
ts.

e immediate cause of all the bad symptoms which we
erated above, is the stricture made on the prolapsed
gut, by the aperture through which it passes.

val of such stricture, consequently, is the only thing which can
; and this object is to be accomplished by returning the bowel
e abdomen, or dividing the parts which form the stricture.

there is no safety, but in returning the intestine into
of the abdomen, you must first use the ordinary reme-
duction, and if, after a due trial, these fail, your patient
nit to the required operation.

edies generally employed before an operation is resorted to, are,
leeding, warm bath, cold applications, and finally, the use of

axis:—The taxis is a particular kind of pressure on the
hich is to be performed in the following manner:—Em-
lower part of the hernia in your hand, elevate it gently,
it towards the abdominal ring; having done this with
you are to put the finger and thumb of the other on the

part just above the ring, and knead it gently by a successiv tion of the finger and thumb, until you at last obtain a pa for a small portion of the intestine or omentum through the tured part, into the abdomen.

When, by this process, you have gradually insinuated a small port intestine into the abdomen, it generally happens that the rest will f accompanied with a peculiar gurgling noise, and the hernia will quently be returned. It is of no use to make pressure on the hernia, view of emptying the intestines of their contents.

25. The time in which hernia is returned by the proce the taxis, is generally from ten to fifteen minutes. Do attempt to perform it at once; proceed gently and gradu and never press with any considerable force on the lower pa the swelling, lest you burst the intestine. If it does not an after a fair trial, do not continue to repeat it, for it is not useless, but often renders all other means, which may be sequently employed, unavailing.

It now and then happens, that a person is so extremely sensitive resists the employment of the taxis with so much violence, that it w impossible to persevere for a time, at least, in its use. In these therefore, do not employ the taxis immediately, but advise the applicat ice, which will reduce the irritability of the part, and perhaps rend employment unnecessary.

26. *Bleeding* :—If the use of the taxis does not succ you must then immediately abstract blood in proportion to age and constitution of the patient.

If the person is young and athletic, a considerable quantity shou taken away; if, on the other hand, he is extremely old, you should he in taking away much; but if he is of the middle age, and not infirm should bleed freely, until fainting is produced, and then apply the This course is to be taken, not merely with a view of reducing the h but to prevent peritoneal inflammation after the operation, if the oper should be thought necessary.

27. *Warm Bath:*—The warm bath, from 90° to 100°, and the patient kept in until fainting is produced, also affords another more favourable period of employing the taxis.

The taxis should be used while he is in the bath; or he must be taken ut and wrapt in flannels, to preserve the faintness, and the remedy emloyed under such circumstances.

28. *Cold Applications:*—Cold applications, as ice, are someimes used with considerable benefit; and indeed, if you wish to ave time to consult on the case, it will retard the progress of nflammation most effectually.

Ice or snow should be used when they can be procured; these should be ut into a bladder (half filled,) and the part completely enveloped in it; if is put in linen, there is danger of some escaping, and destroying the life of e parts on which it goes. As a substitute for ice, a mixture of about half a ble-spoonful each of muriate of ammonia and nitrate of potash, dissolved n a pint of water, will produce a degree of cold equal to 26° Fahr.; or a reater degree of cold than this, may be obtained by the addition of more of e salts, as low as 20° Fahr.

29. *Tobacco:*—Next to the operation, *tobacco glysters* are he most certain means of bringing about the reduction of a trangulated hernia. Besides exciting the action of the intesines, they exert a peculiar depressing influence on the whole ystem, reducing the pulse, and causing nausea and sickness, old sweats and fainting, under which circumstances, the parts ften recede spontaneously, or may easily be reduced.

The *tobacco enema* is to be made in the following manner:—Take one achm of tobacco, and add a pint of boiling water; let the infusion remain out a quarter of an hour, and then strain. Use only half an ounce, to gin with, for though some persons might bear the whole, and even more, t there are others who cannot bear the least thing.

30. *The effects of the* tobacco enema, in hernia, depends

much upon whether the hernia is situated near muscle or tendon.

If it is surrounded by the former, as in umbilical and inguinal, its effects will be considerable; but if by tendon or bone, as in femoral hernia, but slight.

31. The extraordinary violence of the tobacco enema on some constitutions, particularly delicate females, renders it a remedy not without danger; and, therefore, it requires to be employed with great caution.

In cases of this kind, where you are anxious to avail yourself of the relaxing powers of tobacco, and cannot with safety resort to the enema, you may recommend your patient *to smoke* tobacco in the ordinary way. This will be followed by the usual effects of tobacco on the system, and your patient secure from any undue action, as the remedy is always under command.

32. If you should succeed in reducing the hernia, without having recourse to the knife, and if the symptoms of strangulation were severe before such reduction, they will not always cease immediately afterwards.

As they probably depend on the reduced bowel having been inflamed by the stricture, the body should be kept open, and the diet and regimen should be low and sparing, whilst the least degree of pain and tension remain; in short, till all complaint is absolutely removed from the abdomen, and the intestines do their office freely, and without trouble.

33. *Operation:*—If, on the other hand, you fail in your object of reduction, before you submit your patient to the danger of an operation, to recapitulate what I have already said, I would have the taxis employed steadily for ten or fifteen minutes; if this did not answer, I would bleed to syncope, and then have the reduction by the hand attempted again; if this also proved unsuccessful, I should use the tobacco enema, or smoking, and wait a short time; and then, if necessary, have the operation performed.

Do not defer the operation too long; but let it be done before there is any peritoneal tenderness. In a boy, you should wait but for a very short time, after you have used the other means; but in an older person, you may stop longer, because the parts are generally more relaxed.

34. Before we enter on the treatment after an operation, it it is right a few observations should be made on the treatment of the intestine, and of the omentum.

35. *Intestine:*—Sometimes the intestine adheres to the sac; if the adhesions be slight, break them down with the finger, or divide them very cautiously with the knife. If they are general and strong, the best plan will be completely to divide the stricture, so as to reduce the strangulation, and leave the intestine in an irreducible state.

An irreducible hernia is not dangerous, provided there is no strangulation.

36. When strangulation has gone on to gangrene of the intestine, it will be found of a deep brown or chocolate colour, covered with a layer of brown coagulated lymph, fetid, and interspersed with purple or leaden-coloured spots, which readily break down under the impression of the finger.

In such cases, the following treatment is recommended:—If a small portion only of the cylinder is diseased, a ligature is to be passed through the attached mesentery, at right angles with the intestine, and then through the hernial sac; when, by this means, the intestine becomes confined to the aperture, adhesions form, and an artificial anus is produced. The opening has, however, in some instances, after a time, closed; and the fæces have resumed their natural course; but when the whole cylinder is mortified, the diseased part should be cut away; the divided ends brought together, and united by means of four ligatures, inserted around the intestine.

37. *Omentum:*—If the quantity of omentum be small, and little *changed in character, you* must return it to the mouth of

the hernial sac, so as to seal up the opening; but when there is much, your treatment must be somewhat different.

When there is a great descent of omentum, it is not thin and fine as in its natural state, but the different layers unite and form a solid mass. In such cases, you must remove a large part by the knife, and return the remainder to the mouth of the sac to plug up the opening. After cutting the omentum, numerous vessels will frequently bleed, these should be drawn out with a small pair of forceps, and lacerated. If the vessels continue to bleed, ligatures should be applied, and care taken that no omentum is included. The ligatures must be left to hang out of the hernial sac, and in three or four days they will separate.

38. When the omentum adheres to the internal part of the hernial sac, considerable freedom may be used in destroying the adhesions; but I would not advise the use of the knife; just tear through those first in front with the finger, and then spread the liberated omentum out, and lastly tear through the adhesions which confine the omentum to the back of the sac. Ligatures must be applied to the bleeding vessels.

When the adhesions are torn through, and the vessels secured, the omentum must be returned as before-mentioned. Take care all the vessels are secured, and that hemorrhage has entirely ceased; else, when the omentum is returned, the warmth will bring on the bleeding.

39. When the omentum is in a gangrenous state, it will be known by the blood coagulating in the veins. The treatment always adopted is to cut away the omentum close to the mouth of the hernial bag, and leave the remainder to plug up the opening; the vessels must be secured.

Omentum in a state of gangrene, has nothing of the blue appearance seen on gangrenous surfaces, nor any of the green spots to be found on the intestine in a similar state; and if the fingers are passed along the surface, there is a crispy feel.

40. *Treatment after operating:*—After the operation for strangulated hernia, there are two things from which danger is

e apprehended ; the first, that the intestines may not per- n their office, and the fæces not pass in their regular course ; ndly and principally, that peritoneal inflammation may come and produce the same effects as if gangrene were present.

he object consequently should be, as soon as the hernia is returned, to e the wound as completely as possible, by means of sutures, and to loy gentle pressure. But if the hernial sac remains open, the integu- ts should be brought together by means of sutures, slight pressure should ade by dossils of lint, and the parts should be supported in a suspensory lage.

1. The horizontal posture must be strictly ordered ; and ive or six hours after the operation, give a little sulphate of gnesia, or castor oil ; the more motions your patient has, the ter.

ou must not imagine because your patient has two or three motions in the nty-four hours after the operation, that he will do well ; for this is erally the case : you must therefore keep up a free discharge from the els, or the next day you will find them bound, the abdomen tense, and ler to the touch, and vomiting will come on. He is at this time in the test danger ; you must bleed largely and purge him freely by medicines njections.

12. Hiccup will sometimes take place ; it is not the result gangrene, but of inflammation of the intestine, or of the itonæum.

iccup, under these circumstances, should be treated by bleeding and gatives ; and these means aided by opium.

13. The operation for strangulated hernia does not prevent future descent of the intestine ; but the application of a truss ly, prevents it from being so large.

he patient, as we have already observed, should be kept in bed some time r the operation, and good granulations be produced. Dossils of lint uld be applied, and a truss, so as to make pressure, and close the upper t of the sac. Never let the patient rise from his bed without a truss to s on the sides of the sac.

SPECIFIC HERNIÆ.

44. Having gone through the general treatment of herniæ, in their respective stages, we next come to speak of them specifically.

45. There are four species of abdominal herniæ of which we shall here treat; viz. the *inguinal*, the *femoral*, the *umbilical*, and the *ventral*. But besides these four, several others occasionally occur.

INGUINAL HERNIÆ.

46. There are four kinds of inguinal herniæ; the *oblique*, the *direct*, the *congenital*, and the *encysted*.

OBLIQUE INGUINAL HERNIA.

47. This kind takes the course of the spermatic cord; it begins with the cord just as it passes out of the abdomen, and follows the direction of the inguinal canal; its course is oblique, and on this account it is so called.

Oblique inguinal hernia begins to protrude half way between the anterior superior spinous process of the ilium and the symphisis pubis; in the spot directly anterior to the iliac artery, about an inch and half from the lower abdominal ring, opposite to the tendons of the internal oblique and transversalis muscles, where it will be important to bear in mind that stricture most frequently occurs, and not at the abdominal ring, as some surgeons have said, though in old herniæ, the seat of the stricture may be at this

When the hernia has protruded through the fascia transversalis, the tric artery is always on the *inner* side of the hernial sac; therefore, iding the stricture directly *upwards*, or upwards and outwards, you be quite safe of this vessel. The spermatic artery is situated at the of the hernial sac, and could only be injured by cutting downwards. the hernia has protruded through the fascia transversalis, it is situated inguinal canal; the next place where it reaches, is just under the arch d by the tendon of the internal oblique and transversalis muscles; and it receives a covering from the cremaster; above the sac there are the nal oblique and transversalis, and beneath it the fascia transversalis. ng passed through the inguinal canal, (which may be two or two inches a half long,) it reaches the lower abdominal ring, and at this part the ial sac will have *two* coverings, one from the cremaster, and another the fascia spermatica.

8. With respect to the parts about the hernial sac, the rmatic cord is behind, the testicle below, the internal ob- le and transervalis above it, and the fascia transversalis be- th it.

t is generally thought that the hernial sac is an elongation of the perito- m; but in the oblique inguinal hernia it is not an elongation, but a real wth of that part.

19. Oblique inguinal hernia is subject to several varieties; in e, contents, and disposition of the parts.

With respect to the contents, it will, at one time, contain intestine, at ther omentum; and here let me observe that intestine will be generally d in the herniæ of children, and that omentum is very rarely to be met h in the very young.

50. When the tumour has descended into the scrotum, it is en called a *scrotal hernia*.

51. *Diagnosis:*—The distinctive marks which characterize the nial tumour, are, its dilation and expansion on coughing; the pability, when in an horizontal posture, of being returned into eabdomen; its again appearing upon resuming an erect position;

and, in scrotal hernia, its first appearing in the groin, and thence descending into the scrotum.

First:—Inguinal hernia, when it has become scrotal, may be known from *hydrocele*, by the latter beginning at the lower part of the scrotum, and thence gradually ascending to the abdominal ring; by the fluctuation and transparency in the one, by the absence of these symptoms in the hernia. In hernia, the testicle may generally be distinctly felt below the tumour; in hydrocele, it is involved in the substance of the swelling, and cannot easily be felt. Hydrocele, until it has increased to a great size, is not dilated upon coughing. Hydrocele and hernia sometimes occur together; the hydrocele on the fore part, and the hernia behind. Secondly:—There is some difficulty in distinguishing *hydrocele of the spermatic cord* from hernia; but the transparency of the former, and its beginning at the lower part of the scrotum, are in general its characteristic marks. Lastly:—Hernia may also be confounded with *varicocele*, for in this complaint, all the marks of reducible hernia are present. You may thus distinguish them:—Tell the patient to lie down, raise the testicles, and empty the veins; then press firmly on the abdominal ring; keep your finger there, and raise the patient from the recumbent posture, and the swelling will return. On the contrary, if it be hernia, the tumour cannot re-appear until the finger is removed.

52. *Causes*:—The causes of oblique inguinal hernia are the same, as with herniæ in general.

53. *Treatment*:—The treatment of these cases must obviously depend on their being reducible, irreducible, or strangulated.

54. *Reducible*:—After a reduction of the tumour, (which in this state can be readily effected by the patient himself,) the universal mode of preventing its return, is the wearing a truss; the pad of which, by its constant pressure, when applied to the mouth of the sac, occasions an adhesion to take place between its sides, and thus a cure is obtained.

Various kinds of trusses have been invented at different periods; but the common truss in general answers the purpose extremely well; it does not require an understrap; and it has this advantage, that it may be worn in the ht as well as during the day. The mode of applying it is merely to place n the side of the hernia, and bring it round the body; and if you use an derstrap, this should be brought between the thighs.

55. A patient should wear his truss at least two years; but hether he will, at the end of that time, be perfectly cured, ill depend upon his age. A young person is generally cured that time, but it is advisable to continue the truss for three ars. If the person is not young, there is not much hope of fecting a cure by wearing a truss.

When a truss has been worn for some time, the effect upon the hernial sac that it falls into folds by the action of the cremaster, resembling the pearance of the stomach after death, when it has undergone contraction. metimes water forms beneath the adhering part, producing hydrocele of a rticular kind. The fluid in this case is clear as water, and has not the mmon character of serum.

56. *Irreducible* :—Oblique inguinal hernia becomes irreduci- e from various causes; the most common cause is, the hesion of the omentum or intestine to the interior of the ernial bag.

A second cause is the growth of omentum or mesentery, without adhesion, om the accumulation of adeps, which renders it impossible to return the ernia. A third cause is the formation of a membranous band, produced by flammation across the sac, by which the omentum and intestine become ntangled, and the return of the protruded part is prevented.

57. In irreducible scrotal hernia, advise your patient to wear simple suspensory bandage, without which he would be exposed o considerable danger, from the possibility of the hernia bursting, f he should receive a blow on the part.

A patient with irreducible hernia, is always exposed to considerable danger rom blows which he may receive. If the hernia burst, the intestine may be eturned into the abdomen; but the omentum, in general, cannot be returned. If a truss be worn in irreducible hernia, the spring should be very ght, so as to occasion no pain, otherwise there will be danger of strangu- ation.

58. When oblique inguinal hernia is rendered irreducible by the growth of mesentery or omentum, there is no doubt that a patient may be relieved by abstinence in diet, and by taking such means as are calculated to reduce the bulk.

If the hernia is irreducible, in consequence of the formation of a membranous bag across the sac, you cannot depend upon any plan to effect its reduction. Long continued application of cold is sometimes used with benefit.

59. In those cases in which the hernia is very large and irreducible, the best plan is to advise the patient to wear a laced suspensory bag, which by its pressure on the scrotum will not only prevent the hernia from increasing, but will diminish its size by absorption.

In this manner, a bulky hernia may be rendered much less inconvenient to the patient. With respect to wearing a truss in this state of hernia, if the patient should feel any pain, it will not be advisable.

60. *Strangulated:*—When the hernia is incarcerated or strangulated, the patient first complains of pain about the region of the diaphragm, as if a cord was bound tightly round the upper part of the stomach; frequent eructations follow; vomiting of a bilious, and sometimes of a feculent matter; obstinate constipation; quick, hard pulse. The tumour is red, painful, and oedematous; the abdomen becomes sore and painful to the touch; a profuse perspiration breaks out over the body; the pulse becomes small and thready; troublesome hiccups; remarkable expression of anxiety in the countenance.

These symptoms often undergo a remission, but return again with increased violence; and if reduction is not speedily effected, a mortification of the intestine takes place, when the patient, after suffering intolerable pain, becomes suddenly easy; the tumour assumes a purple, or leaden colour, and, from being tense and elastic, becomes soft and doughy, and has an emphysematous feel; the abdomen becomes more tense; the hiccup more severe;

overed with a cold clammy sweat; the eyes have a glassy ap-
e pulse is irregular, though softer and fuller; the patient is
sensible to the last, and often expires with the delusive hope of

Seat of Stricture:—Is commonly opposite the tendon
versalis muscle, which circumstance is often produced
nce of the thickening of the hernial sac, from the
a truss. Sometimes the stricture is an inch above
al ring. At others, when the hernia is old and large,
But when the hernia is recent and very small, the
ften two inches above the ring.

to this last circumstance, that the finger is often lost in oblique
ia, before the stricture can be felt, so far above the ring is it
metimes the finger feels the stricture an inch above the ring, at
h and a half, or even two inches; and in each of these situa-
y common. The stricture is sometimes found at the neck of
, in consequence of a membranous band crossing it at that
other cause of stricture arises from a portion of intestine being
ntangled in a part of the omentum.

se:—The cause of strangulation may be an additional
testine, though it consists only of a single volume,
wn with it a portion of mesentery, which, added to the
stine previously descended, so completely occupies the
opening as to produce the symptoms of strangulation.

cient, in giving the cause of strangulation in intestinal hernia,
ortion of intestine has descended into the sac; because it often
strangulation is produced, although only a single convolution
, and this convolution being elongated, does not occupy any
e in the mouth of the sac.

tment:—As there is no safety in these cases, but
the intestine into the cavity of the abdomen, it
first object, except in one or two cases, hereafter
ned.

You would at the onset make use of the taxis in the manner and direction as hinted in the 24th paragraph; and then pursue the other steps for reduction as related in the 33d paragraph.

64. *Operation*:—Having used the means, which have been recommended, without success, you will then proceed to the operation.

The patient should be placed on a table from two to three feet high, with the legs hanging over the end; the hair having been removed from the pubes, you should commence the incision from the upper part of the tumour, in whatever situation it may be, and carry it along its middle to the lower part. There will be no necessity to continue the incision quite to the lower part, if the hernia is large, as then it often happens that there are vessels crossing in that part. By the first incision, you lay bare the fascia of the cord, and in doing this you will divide a small artery, the external pudendal, which crosses directly opposite to the abdominal ring; take your tenaculum, and secure the two ends of the bleeding vessel, and then scratch through the fascia of the cord, just below the ring, with considerable care, separating it from the cremaster muscle; a small opening being made, you introduce a director upwards to the abdominal ring, and inferiorly to the lower part of the swelling, and divide the fascia more or less, as may be required. The next parts that will be brought into view, are the fibres of the cremaster muscle, passing obliquely from above, downwards; this covering is of considerable density, and must be opened with care; a director is to be introduced under it, in the same manner as for the fascia of the cord, and then it is to be divided; as soon as this is done, the hernial sac becomes exposed; it is of a blue appearance, and semi-transparent from the fluid it contains. Having laid bare the sac, you pinch it between your fingers, and feel distinctly the intestine and omentum within it; in rubbing the sac between the fingers, do not use any force, as this is exceedingly dangerous. When you have raised the sac so as to separate it from its contents, take the knife and make a small cut into it, not downwards, but in a lateral direction; place the instrument horizontally, so as to avoid the danger of wounding the intestine, a danger to which you would be exposed if you cut downwards. As soon as an opening is made, water generally escapes, if intestine be included in the sac, and there are no adhesions. Having opened the hernial sac, a director is to be introduced as far as the abdominal ring, and then it is to be divided up to that extent; the director is then to be carried to the lower part of the sac in the same manner. When both omentum and intestine are in the sac, the omentum will be found before, and intestine behind; there will also be a small portion of omentum at the upper part. After having opened the hernial sac, the great difficulty commences;

u are next to feel for the stricture; put your little finger into the hernial c, and ascertain if the stricture is situated at the abdominal ring; and if so, read the omentum on the fore part of the intestine, like an apron, so as to ver it entirely; by this plan, the intestine is less liable to be wounded, and adds exceedingly to the security of the patient; and then you pass a probe- inted bistoury, guided on the finger, and divide the stricture, not very freely, t to a small extent; a slight motion of the knife will do.

The stricture, however, does not generally exist at the external ring, for is usually situated at the upper part of the hernia, just opposite to the ndon of the transversalis muscle, or else in the hernial sac itself; and hat you have to do is to slit up the abdominal ring, to hook up the abdo- inal muscles, and draw them upwards towards the abdomen; then to pull wn the hernial sac; by this means you expose the stricture, and render the eration more safe to the patient. The probe-pointed bistoury is blunt to e extent of a quarter of an inch, sharp for half an inch, and then blunt ain, so that you may introduce it on the director and finger, and divide e stricture without fear of cutting too much. You must divide the stricture the centre, and cut *directly upwards*, let the hernia be where it may, d you will be in no danger of wounding the epigastric artery. The stric- re being divided, you next return the intestine before the omentum. You ould always, at this stage, introduce a finger, to see whether the parts are eely returned or not, and are not compressed at the place where the stric- re was situated. If there is any air in the intestines projecting above the ricture, bring it down into the lower part, and by this means they will be ore easily returned. The intestines should be returned piece-meal to the avity of the abdomen, and then the omentum should succeed it.

65. *After-treatment:*—The general remarks on the after- reatment of herniæ, must be here resorted to and put in prac- ice.

66. *Operation for large herniæ:*—Herniæ of a large size require a very different operation from that we have just gone through.

In those cases in which I have operated, I have made an incision to the extent of three inches in the upper part of the hernia, an inch and a half above the abdominal ring, and an inch and a half below it; having com- pleted this, and laid bare the fascia of the cord, a small opening was made to the extent of about an inch below the abdominal ring, and a director put into it. Having insinuated the director between the fascia of the cord and

the cremaster, I passed it under the abdominal ring; and carrying pointed bistoury upon this director, divided the ring to the exte inch. I then put my hands on the side of the tumour, a portion of testine was returned into the cavity of the abdomen, but all the could venture to use, could not return the whole. By dividing the s however, the patient was relieved from the symptoms under which previously laboured. All you have therefore to do, is, to bring th of the wound together, and let the hernia remain.

67. *Small inguinal hernia:*—There is a small hern occurs above the abdominal ring, and does not emerge thr at all, which is equally dangerous as a hernia of twenty ti magnitude.

68. This is a case which it is difficult to ascertain living subject. A patient will come to you with sympt strangulated hernia, and you find a fulness on one side the abdominal ring, which is not observable on the other derness upon pressure of the part where the fulness is, great disposition to vomit.

The operation necessary to be performed is, to make an incision a course of the inguinal canal, a little obliquely above the abdominal as to avoid making the opening large. The incision through the ments, lays bare the tendon of the external oblique; having laid b tendon, and made an incision through it, the hernia immediately projecting through the edge of the wound. The hernial bag is cove tendinous process which passes from the upper aperture, from w hernia proceeds. As soon as the hernial sac is laid bare, a little fluid You will find the stricture at the orifice. You are to introduce director into the orifice, and divide the stricture by making a slit u with a probe-pointed bistoury.

69. *Inguinal hernia in the Female:*—Inguinal herni less common occurrence in the female than in the male, i sequence of the smallness of the parts through which th mentum rotundum descends.

When this occurs, the hernia is generally small, and takes a simila to that of inguinal hernia in the male, comparing the ligamentum rot

e spermatic cord. It begins midway between the spine of the ilium, the symphisis pubis; its origin being situated on the *external side* of the astric artery. It then enters the inguinal canal, under the internal ue and transversalis muscles, till it reaches the abdominal ring, where nerges.

0. Inguinal hernia in females is generally reducible; they n require a truss similar to that used for the male; and as y are usually small, they will give way to pressure after about ear's use, but it will be right to continue the truss two rs longer.

71. The operation for strangulated inguinal hernia in females, fers in some respects from that required in the male.

Vhen you have made your incision upon the hernia below the ring, you l find that the peritoneal bag does not contain either intestine or omen- a, and that nothing but a little water escapes. This leads you to slit up abdominal ring, and on putting your finger within it, you will sometimes l a portion of intestine, and even omentum, contained within the sac, ve the ring. Having divided the tendon of the external oblique, you will l a convolution of intestine has descended, and you will then look for the icture, which you will generally find about two inches above the abdominal g. Having slit up the tendon of the external oblique, from an inch to inch and a half, and directed your assistant to draw it up, you will t a director within the sac, feel for the stricture, and dilate it *upwards outwards*.

DIRECT INGUINAL HERNIA.

72. In this case, the hernia does not follow the course of the ermatic cord, but comes out almost directly through the ex- rnal abdominal ring, and pushes before it the fascia transver- lis. It passes on the *inner side* of the epigastric artery, and rectly as it emerges from the ring, is received under the fascia

of the cord, which forms one covering, and passes into the scrotum.

It first passes on the *inner side* of the epigastric artery, and directly as it emerges from the ring, is received under the fascia of the cord, which forms one covering; the cremaster passes over obliquely, so that the whole surface is not covered by it. Besides these coverings, it has one of its own, which is properly the covering of the hernia, half of which is formed by the tendon of the transversalis, and the other half by the fascia transversalis. This forms a complete tendinous pouch, in which the hernia is received.

73. *Diagnosis:*—Direct inguinal hernia may be known from the oblique, by the two following circumstances:—In the first place, tracing the spermatic cord, you will find that in direct hernia, the hernia is *behind* the spermatic cord; whereas in the oblique it is *before* it: secondly, when you trace the mouth of the sac, in oblique hernia, you will find it *above* the abdominal ring, towards the spine of the ilium; but in direct hernia, there is rather an inclination *inwards*, towards the umbilicus.

Direct inguinal hernia also differs from the oblique in these respects:—First, the oblique emerges from the abdomen, midway between the spine of the ilium, and the pubes, whereas the direct emerges directly behind the abdominal ring. Secondly, the oblique takes the course of the spermatic cord, and the direct passes directly through the abdominal ring from behind. And lastly, the oblique is covered only by the fascia of the cord and the cremaster, the direct has, in addition, a covering derived from the tendon of the transversalis and its fascia.

74. *Causes:*—The cause of direct inguinal hernia is usually the effort made to expel the urine in cases of stricture.

It may likewise be produced suddenly from a laceration of the tendon of the transversalis, in which case the covering from this tendon will be found wanting.

75. *Treatment:*—This, as in other cases, must depend entirely on the hernia being reducible, irreducible, or strangulated.

cible:—When the direct hernia is reducible, you
the truss not so as to press upon the pubes, for this
n, but upon the parts a little above the abdominal

ot press upon the whole of the inguinal canal, as in the case
ia; but the truss should be applied so as to make its pressure
e centre of the abdominal ring.

ucible:—If the hernia be irreducible, the means
d for irreducible herniæ in general, will be proper.

gulated:—When strangulated, the reduction must
l in a direction different to that required for the

s to be grasped as in the oblique hernia, with one hand, while
thumb of the other hand are to be placed over the abdominal
he neck of the swelling, and the pressure must be directed
nwards, instead of upwards and outwards.

this kind of inguinal hernia, the hernia may ap-
educed by the employment of the taxis, but the
en in great danger, as the intestine may still be
within the hernia.

ation:—In direct inguinal hernia it must be remem-
e spermatic cord is placed on its *outer* side; that the
ered by the fascia of the cord, by the cremaster par-
contained in a sac formed by the tendon of the trans-
cle, assisted by the fascia transversalis, beside a
, as in other herniæ.

n operating in these cases, the division of the stricture
rds, is always to be performed, as for every other common
lated hernia, whether oblique or direct. The after-treatment
rdance with the general rule.

CONGENITAL HERNIA.

81. In this hernia, the protruded parts have not any proper peritoneal sac, but are contained in the tunica vaginalis of the testicles, which, in fact, serves as the hernial sac.

82. There was formerly some difficulty in explaining the formation of congenital hernia, but the subject is now very plainly and accurately defined.

Until the approach of birth, the testes of the fœtus are lodged within the cavity of the abdomen. The anterior and lateral surfaces of the testes are covered by a reflected peritoneum, while posteriorly they adhere to the psoæ muscles by means of cellular substance. A little while before birth, generally in the eighth month, the testicles descend through the abdominal ring, and then pass through a kind of membranous canal, which the peritoneum forms from that aperture into the scrotum. Thus, as they were already furnished with one peritoneal investment up in the loins, a second is acquired by their entering this canal, or rather elongation of the peritoneum. The first covering, which is smooth, and every where closely adherent to the surface of the testes, constitutes the *tunica albuginea*; while the other, which is denser, and in front loose and unconnected, becomes the *tunica vaginalis*. While the testes are descending, and even when they have passed into the scrotum, they are still covered by the peritoneum; in coming down from the loins, they bring the peritoneum with them, and the elongation of that membrane, usually forms a sac analogous to a hernial sac. Soon after the testes have arrived in the scrotum, the upper part of the peritoneal canal is gradually shut up and obliterated, by which change, all communication between the cavity of the peritoneum and that of the tunica vaginalis is effectually annihilated. Should, however, the complete closure of the peritoneal canal not take place, then there is an open communication between the cavity of the abdomen and that of the tunica vaginalis; and under these circumstances portions of the bowels will pass down the canal, and thereby constitute what is commonly termed a *congenital hernia*.

83. The way in which congenital hernia takes place, may, therefore, be thus explained:—The tunica vaginalis is open *to* the abdomen a little prior to birth, a portion of intestine is very

eadily admitted into this part, and the congenital hernia is pro-.uced.

The appearance of this hernia is well known to nurses; so that if the infant has hydrocele, it is said to have the *watery rupture;* if hernia congenita, the *windy rupture.*

84. It scarcely ever happens in the young subject, that any thing but intestine is contained in this kind of hernia, the omentum not reaching so low as the orifice.

When intestine or omentum has descended into the tunica vaginalis, reaching to the lower part of the scrotum, the testicle is involved in the swelling, so that it cannot be distinctly felt.

85. *Diagnosis:*—It is distinguished from *common hernia* by the testicle not being distinctly felt at the bottom of this tumour; and from *hydrocele of the spermatic cord*, for which it is often mistaken, by pressure upon the abdominal ring, after the swelling has receded in the recumbent posture, preventing its return upon rising to the erect position.

86. *Reducible:*—Previous to applying a truss, it will be proper carefully to ascertain, by examination, if the testes have already descended into the scrotum; if not, let the hernia extend itself until it has gradually brought down the testicle into the scrotum, and then, and not until then, apply a truss.

For the first three months, perhaps a pad and bandage may be sufficient to prevent the descent of the hernia; but after this period, a truss with a spring may be employed with safety, or even at a younger period if necessary.

87. *Irreducible:*—With regard to the treatment of this hernia in the irreducible state, the same as directed for common inguinal hernia, is here applicable; and when *strangulated,*

the same means as recommended in those cases, sh employed.

88. *Operation*:—When an operation is required, i differ from that described as necessary for oblique hernia, in a few particulars.

Having laid bare the tunica vaginalis, it should not be opened on account of exposing the testicle, but a sufficient quantity of tu be left whole, to cover this gland. On opening the tunica vaginal larger quantity of fluid generally escapes than is found in the sac mon inguinal hernia. The *seat of stricture* will be usually found edge of the transversalis muscle, or at the internal ring, when it divided in the same manner as in other cases of hernia; after which truded parts, if not adherent, should be returned. If extensively the stricture should be divided in the same way, but the surgeon attempt to separate the adhesions. You must then bring the ed wound together, and make them adhere. In this way you leave th with his irreducible hernia, but relieved from the dangerous sy strangulation. The patient should wear a laced bag-truss after t tion.

ENCYSTED HERNIA.

89. This is a particular kind of hernia, but of v occurrence.

It occurs in the following manner:—the tunica vaginalis becom by adhesion, opposite the abdominal ring, but remains open above it; and when a protrusion of intestine occurs, this adherent porti tunic becomes elongated, forming a distinct hernial sac within t tunica vaginalis.

90. In operating upon a case of this kind, the tuni nalis should be opened freely, to expose the sac, otherwi difficulty may arise.

FEMORAL OR CRURAL HERNIA.

. The seat of femoral hernia is the upper and fore part e thigh, the protruded intestine passing out at the same ing through which the large blood-vessels are transmitted to thigh, and consequently under Poupart's ligament. It is ; commonly met with in women.

fore femoral hernia protrudes, it elongates the femoral sheath, which a covering for it; it then descends on the *inner side* of the epigastric ar- and though sometimes situated immediately over the femoral vessel, is generally on the *inner* side.

. *Diagnosis:*—The characteristic symptoms of crural ia are, its situation with respect to inguinal hernia; its ca- lity of reduction, with regard to bubo; and the want of the ts of lumbar abscess, from that disease.

is distinguished from *inguinal* hernia by the tumour being seated deeper nore laterally, and the ring of the abdominal muscles, which lies en- above the tumour, in femoral hernia, completely surrounding the parts guinal hernia; from *bubo*, in the reducible state, by the capability of ction; in the strangulated state, by the symptoms of strangulation; from *abscess*, by the fluctuation of the tumour in the latter disease, and by receding long-continued and deep-seated pain in the loins.

. *Treatment:*—The treatment laid down for inguinal ia, will, for the most part, be applicable to the species now r consideration; but the truss required for this kind is rent from that which will do in inguinal hernia.

e pad should be at right angles to the spring, placed lower down than guinal hernia, so as to cover the sheath, and the space through which ernia protrudes. Femoral hernia, however, is rarely cured by the appli- of a truss, but it is right it should be worn, to prevent the farther de- of any of the parts.

94. *Irreducible:*—In this complaint, it will be right to wea truss with a hollow in the pad, so as to receive the hernia, a confine it; and if the hernial sac contains omentum, there w be a chance of its being absorbed.

95. *Strangulated:*—The symptoms of strangulated femo hernia are more urgent than those of strangulated ingui hernia; and the reason is, that the orifice through which t femoral hernia protrudes is smaller, and the pressure con quently greater.

The patient complains of more pain; and rarely lives so long as a pers under the same circumstances with the other kinds of herniæ. They genera survive four days if the stricture remain.

96. In your object at reduction, the taxis should be first sorted to; and if you fail in that, employ the tobacco injectio bleed the patient, and use the warm bath.

In employing the taxis for femoral hernia, the patient must be placed the bed, with the shoulders elevated, the knees bent at right angles to body, and approximated to each other, so as to admit an arm only betwe then you use pressure on the hernia. It should be pressed *directly do wards*, in order to get it below Poupart's ligament; if you press it upwa without having first done this, you will merely get it farther above the li ment. It must first be brought below the level of Poupart's ligament, *then* knead it between the fingers and press it *upwards.*

97. *Operation:*—These means failing, you must resort to operation, for these are cases in which delay occasions m mischief, as there is less chance of reducing them than in guinal hernia.

Operation:—In operating for femoral hernia, you make your first inci in the course of Poupart's ligament, along the tumour, extending from side to the other; the second you make at right angles to the first, tow the umbilicus, so that the two incisions resemble the letter ⊥ inverted. angular flaps are to be next dissected off, and reflected, so as to allo

greater room. By this incision, you expose the superficial fascia, which you next divide, and the hernial bag, called by me *fascia propria*, is brought into view. This is next cut through, and the hernial sac, or peritoneal covering, make its appearance. The next point is to make an incision into the hernial sac, with the greatest possible care, and then introduce a director to ascertain the seat of stricture. Having opened the hernial sac, and exposed the intestine, divide the stricture directly *upwards* and *inwards*, a little inclined to the umbilicus. The seat of stricture in femoral hernia, is at the posterior edge of the crural arch, just where the intestine leaves the abdomen; therefore in dividing the stricture, after introducing the director, a bistoury, blunted at the point, is to be put on it, and placed against the stricture; in this way there is no danger of wounding the intestine. The bistoury is next to be gently raised, and with a slight touch of the instrument, the fibres will give way, and, by a little pressure, the parts are easily returned.

98. After the operation, the same mode of closing the wound, and indeed the after-treatment, generally, should be the same as in ordinary cases.

UMBILICAL HERNIA, OR EXOMPHALOS.

99. In umbilical hernia, some of the viscera of the abdomen, more frequently the omentum, pass out at the umbilicus, through an opening in the linea alba; and, as in other species of herniæ, are included in a sac formed by the peritonæum.

Umbilical hernia is very common in infants soon after birth; also in adults where there is great obesity, and in pregnant women.

100. Umbilical hernia commences with a small protrusion about the size of a nut, which can be easily reduced, but which again appears immediately the patient coughs, or exerts himself.

If neglected, it soon increases in bulk; and, as it augments it gravitates; so that the larger part of the swelling is below the orifice of the sac, and, in some instances, it acquires so great a size as to reach the upper part of the thigh.

101. This complaint is particularly frequent among
and is also more common to women than to men.

102. *Causes:*—The causes of umbilical hernia are
depending, more or less, on the laxity of the parts,
distention of the abdominal parietes.

103. *Treatment:*—The treatment of umbilical her
vary, according to the stages of the complaint, and th
in which it occurs.

104. *Reducible:*—If the hernia is small, you may e
to reduce it by the hand alone; but if it is very large,
take the bottom or flat surface of a wooden platter, and
the abdomen, and press on it. When the pressure has b
up for some time, the orifice at the umbilicus becomes
and the hernia returns. When it is reduced, a truss
worn, or pressure kept up over the part.

105. In infants subject to this disease, the plan I
adopt, is, after having reduced the hernia, to apply half
ball sufficient to cover the opening, and to confine it
situation by means of adhesive plaster.

A linen belt should be applied, and secured round the body, bu
as the child begins to walk, two straps must be fixed to the lower p
belt, which should pass under the pelvis, between the thighs, to p
belt from slipping.

106. In adults, at the beginning, the plan of treatmen
be the same as in children; but if by means of the ivory
hernia should not be returned within the opening of the u
a pad, covered with black silk, and fastened by adhesive
is to be placed over the part.

though a truss will seldom effect a cure, it should, notwithstanding, be ys worn; and the truss I would recommend, should consist of two broad , which must come round and buckle on the abdomen. But as this is nually liable to change place, a narrow belt joined to the broad one, d also go under the pendulous part of the belly.

7. *Irreducible:*—Umbilical hernia becomes irreducible from ame causes as the inguinal; viz. adhesions of the intestines mentum to the inner surface of the sac, or a growth of ntum, rendering it too bulky to repass the opening from h it escaped.

der these circumstances, the hernia sometimes acquires an enormous more particularly in women, whose abdominal parietes have been ened by frequent pregnancy.

8. When the hernia is irreducible, and not of very large a truss should be worn with a hollow pad.

hollow should be just sufficient to contain the swelling, and the edges l be rounded off, so as to prevent any injury, from pressure, to the surling parts. The substance of the cup should be pewter, which should rered with soft leather. The truss should be buckled round the abdoand if omentum be contained in the hernial sac, it will be likely diminished in size, and the danger of the sac bursting will also be ated.

9. In very large umbilical herniæ, a truss cannot be l.

you can do, in these cases, is to support the swelling by bandages, l over the shoulders so as to prevent the constant dragging of the ur.

0. *Strangulated:*—The symptoms indicating strangulation is form of hernia, are the same as exist when inguinal or ral herniæ are in the same state; but in the umbilical disease are generally less urgent.

Strangulation in this kind is frequently produced by the patient taking food not easy of digestion, or such as occasions flatulency: persons having this complaint should, therefore, eat sparingly, and be careful to avoid all food difficult of digestion, or likely to create flatulence.

111. The seat of stricture is usually at the tendinous opening through which the hernia protrudes, but sometimes the neck of the sac itself is thickened, and prevents the reduction of the viscera.

112. When strangulation exists, you must first endeavour to relieve the patient by employing the taxis.

The patient being placed on the back, the shoulders should be elevated by pillows, also the pelvis a little raised, and the thighs bent at right angles with the body. You should then grasp the swelling with your hand, and direct the pressure a little *upwards* as well as inwards, because the opening to the abdomen is not usually in the centre of the swelling; at the same time kneading the tumour.

113. *Operation:*—Should the employment of the taxis fail in its object, the other customary means should be employed, particularly tobacco, as it has greater effect in relaxing the muscles and taking away the cause of the stricture in this than in any other kind of hernia.

Operation:—Although this is the most simple and easiest operation for hernia, it is not one of the most successful; there is a great difficulty in obtaining a flap of skin to close the opening. The plan you are to adopt in operating, is to make, first, an incision across the tumour, and then another at right angles, so that the whole is like the letter ⊥ inverted. The integuments being thus divided, the corners of the incision are to be turned aside, by which the hernial sac is brought in view. This being carefully opened, the finger is to be passed to the orifice of the sac, at the umbilicus, and a blunt-pointed bistoury introduced on it. The stricture is to be divided *upwards*, in the direction of the ensiform cartilage. Having returned the intestines, the parts are to be brought together, and a flap formed from above to cover the opening. If adhesion of the sides of the wound can be effected, the danger of peritoneal inflammation will be lessened. Dossils of lint and

hesive plaster are to be applied over the wound. The after treatment is same as for other herniæ.

VENTRAL HERNIA.

114. This hernia only differs from the umbilical in its seat, ich is usually at the linea alba or linea semilunaris; but any sceral protrusions at the anterior or lateral parts of the abdomen, cept those already described, may be called ventral herniæ.

I do not know that there is any thing in this kind of hernia requiring a tinct notice. When it occurs low down, care must be taken, when erating, of the epigastric artery.

WOUNDS.

1. Wounds are generally defined as recent solutions of con- uity in the soft parts, suddenly occasioned by external causes, d generally attended at first with hemorrhage.

2. Wounds are distinguished into several kinds, viz. *incised*, *uctured*, *contused*, *lacerated*, *poisoned*, and *gun-shot wounds*.

The division of wounds is attended with advantage in the description of eir treatment, as it must in some degree vary from the mode of their pro- ction.

INCISED WOUNDS.

3. An incised wound is a mere division of the parts, more or less extensive, according to the extent of the injury.

In these cases, the fibres have only been simply divided; they have suffered no contusion, nor laceration; consequently they are less likely to inflame severely, or to suppurate or slough; and they commonly admit of being united again in a very expeditious manner.

4. The extent and colour of hemorrhage which attends these wounds is of very useful information to the surgeon, inasmuch as it enables him to judge the kind of vessels which are injured, and not unfrequently the limits of the wound.

If an artery is wounded, the blood flows in jets rapidly, and is of a florid colour; if a vein, the bleeding is slow, gradually filling the wound, and the blood is of a purple colour.

5. In a recent simple incised wound, there are three objects which the surgeon should endeavour to accomplish without delay. He must first check the bleeding: secondly, remove all extraneous matter: and lastly, bring the parts into perfect apposition.

Accordingly, when you are called to a case of this kind, you are to make pressure upon its surface with a sponge to arrest the hemorrhage, and if the vessels be small, you will soon find it subside under a steady and continued pressure. So soon as the bleeding ceases, the coagulated blood is to be completely sponged away from the surface and edges of the wound, the edges are to be brought together, and a strip of lint or linen moistened with the blood is to be placed on the part in the direction of the wound, when the blood, by coagulating, glues the edges together in the most efficient and natural manner; adhesive plaster is to be applied over the lint, with spaces between to allow of the escape of blood or serum.

6. If this plan has been adopted, in a few hours, inflammation

rises, and fibrin becomes effused upon the surfaces and edges of ie wound, by which they become permanently united, constiting the process commonly called ***union by the first intention.***

a few days, vessels shoot into the fibrin, effused by the inflammation; it becomes organized with arteries and veins, and after a time, with ab- ents and nerves; thus the structure of the part is restored.

. For ordinary cases, the treatment I have recommended uld be adopted, but there are a few points to which I shall r call your attention.

. If the wound be in a muscular part, more especially in isverse wounds of muscles, it is required that the position of limb be carefully attended to, that the wounded muscle may relaxed as much as possible, and its separated portions apximated.

hus, if the biceps muscle was divided in the arm, the limb must be bent ght angles; and if the triceps be injured, extension will be necessary.

. If the wound has occurred in a muscular part, which is supported, as in the cheek, a suture is required to preserve roximation.

he thread employed should be as fine as possible, and only as many as bsolutely necessary, to produce the desired effect, should be inserted. wound be angular, and of considerable extent, a suture at the angle is able, or the edges will seldom be retained in their proper situation.

0. It is quite a mistake to suppose that sutures are injurious, l that they should be never employed; for a wound often heals ter with a suture and a cooling lotion, than with adhesive ster.

11. Parts which are nearly separated readily unite, as the

finger or nose when it has been cut, or torn, and a suture is required to aid its union.

Parts entirely separated will sometimes unite. Mr. Hunter removed the spur of a cock, and placed it in the comb by incision, where it not only adhered, but grew. He also removed the testis of a cock, and placed it in the belly of a hen, where it adhered. A tooth extracted from the human subject, and placed in the comb of a cock adheres there.

12. When adhesion of an incised wound can be completely effected, the danger ceases.

An incised wound into the abdomen, exposing its different viscera, is not followed by danger, if the wound is made to unite. Wounds of the chest, even complicated with injury to the lungs, cease to be dangerous under the adhesive process. Wounds of the brain will unite by adhesion, and the patient recover.

13. Union by adhesion may be prevented by several circumstances.

14. First:—By the introduction of many, and of very large sutures.

It is, therefore, necessary to employ the finest threads, and to cut off one of their ends, that they may occupy as little space as possible; and, in from four to six days, they should be removed, to prevent their producing suppuration and ulceration.

15. Second:—By the inflammation being suffered to run too high from want of bleeding generally, or locally, by leeches; or, from not employing cooling evaporating lotions.

The adhesive inflammation is but a slow degree of action, and if it is not kept in bounds, suppuration will occur. You should, consequently, when there is too much inflammation in the part, apply spirits of wine and water, or acetate of lead and water; give purging medicine, and, if necessary, bleed.

16. Third:—The use of caustic applications, whether by

h, nitric acid, the actual cautery, &c. will necessarily pre-
adhesions.

. Fourth :—Union, by adhesion, is often frustrated by the
eon's impatience.

is anxious to see if union be effected or not, and most absurdly, and
hievously, raises the dressings, disturbing, and often breaking, the adhe-
, and thus renders the progress of granulation necessary, when it might
been avoided.

8. Fifth :—The adhesive process is not unfrequently pre-
ted by the state of the constitution.

the patient be much out of health, or if he be extremely irritable, the
mmation will proceed beyond the bounds of adhesion, and suppuration
take place. In such persons, evaporating lotions to the wound, and
m internally, are the means of arresting the mischief which will other-
ensue.

9. Lastly :—If many absorbent vessels or secretory glands
wounded, adhesion will sometimes be prevented.

0. Although adhesion is a very desirable process in most
es; when there is much loss of substance, it must not be at-
pted.

herefore, when I remove those marks which are called *nevi materni*, I
ot attempt to bring the edges of the wound together; but only, after the
ding has ceased, apply lint for twenty-four hours, and then a poultice.
breast I often dress in the same manner, after the removal of tumours
nected with much disease of the integument.

21. Many operations may be performed, so as to admit of
ts uniting by the first intention; but the practice, as Mr.
nter observes, should be adopted with great circumspection.

The mode of operating with that view should in all cases be a secondary,
d not a first consideration. In cases of cancer, it ought never to be at-
pted.

22. Finally, in the union of wounded parts by adhesion, it is hardly or never possible to bring them so close together at the exposed edges, as to unite them perfectly by these means; such edges are therefore obliged to take another method of healing.

If kept moist, they will inflame as deep between the cut surfaces as the blood fails in the union, and there suppurate and granulate; but if the blood be allowed to dry and form a scab between, and along the cut edge, then inflammation and suppuration of those edges will be prevented, and this will complete the union.

LACERATED WOUNDS.

23. Lacerated wounds are those in which the fibres, instead of being divided by a cutting instrument, have been torn asunder by some violence capable of overcoming their force of adhesion.

Lacerated wounds also differ from incised in being attended with less bleeding; and it will be as well, likewise to remark, that the largest arteries of limbs may be torn through without any dangerous hemorrhage occurring.

24. The nervous system frequently suffers severely from lacerated wounds; and erysipelas is not an unusual effect of laceration, more particularly if it is inflicted on the scalp.

Spasms of the limbs and tetanus often follow lacerations of the head.

25. Lacerated wounds are more disposed to inflame than the incised, and they require the same treatment.

However, more care is required in the use of cooling lotions, and the application of leeches; in quiet, and in the exhibition of opium under the first appearance of spasmodic symptoms. Bleeding should be resorted to with caution.

CONTUSED WOUNDS.

hese injuries differ from the incised and lacerated in being accompanied with disorganization: blood is ited, the cellular tissue is broken down, muscles are and many parts disorganised.

d wounds bleed but little, from the organization of the parts being , and from the extravasation making pressure upon the vessels divided.

he pain which accompanies a contused wound, is in an atio to the cause of the injury.

nerally severe, when the wound is only moderately contused; and, er hand, when there has been so violent a degree of contusion, as destroy the organization of the part, the patient scarcely suffers it all.

The changes which a contused wound must undergo will on the extent of violence by which it was produced, and titution of the patient.

he bruised fibres have not been injured above a certain degree, the urates, but such portions of the wound as have suffered greater nevitably die, and are cast off in the form of sloughs. Granulations vards formed, and the breach of continuity is repaired by the pro- atrization.

The treatment of contused wounds must consist in faci- the separation of the contused parts, instead of approxi- as in the incised and lacerated wounds.

ct this object, and to expedite the process, fomentation and poultices used, which lessen inflammation when too violent, and hasten the ve and ulcerative processes. If the inflammation be still consider- hes should be applied; but bleeding ought not to be had recourse the arm. Professor Assalini, however, recommends both general

and topical bleeding, and gives the preference to cold applications ins the warm.

30. At the same time that you attend to the local trea of the wound; the internal remedies and regimen, shoul be adapted to the condition of the patient.

The bowels should be kept regular; but opium should be combin the medicines given, to effect that object. If the constitution becom debilitated, the sulphate of quinine may be given, or ammonia combin opium. A generous diet is also necessary.

31. When the sloughing, or separating process is com the fomentations and poultices are to be abandoned.

The parts are then to be approximated by adhesive plaster, or a dressing be applied to the wound, treating it as a simple ulcer.

PUNCTURED WOUNDS.

32. A punctured wound signifies one made with a n pointed instrument, as by a sword, bayonet, scissors, points of broken bones, &c.

Wounds of this description are in general infinitely more dangero cuts, notwithstanding the latter have the appearance of being by far t extensive.

33. Punctured wounds are often highly dangerous; fr effects which they produce in the parts injured, or on th stitution generally.

The effects of punctured wounds depend, however, very much u form of the wound, and the state of the constitution.

34. A slight punctured wound through the skin into th lular tissue, will be sometimes followed by *the absorbent*

'ed lines, from the wound to the absorbent glands, in ;y terminate.

s sometimes form upon the absorbents, in their course to the) the groin; and sometimes in the glands in which they terminate; ' irritable subjects, death will occasionally ensue.

a *tendinous structure* be punctured, alarming symptoms times arise, in part from the form of the wound, from power of the structure, and partly from the confinement beneath the fascia.

ı of the wound produces these 'symptoms, because the parts are bly separated than actually divided, and consequently the adhe- ; does not readily succeed. The structure of tendons and fasciæ, little vascular organization, and difficult restoration, leads to itutional effort; and the form of fascia tends to confine the pus ecreted.

ıe effects of punctured wounds on the *nervous system*, ıresently explain in speaking of *tetanus.*

ıe treatment of punctured wounds, must, more or less, the extent of the puncture, and the parts injured.

ıe treatment of punctured wounds, with respect to ıem, is a matter of controversy, but I should recom- following rules, as most likely to be attended with

ı you are called to a case of this kind, extend the puncture to an ı lancet; the surrounding parts should then be pressed to remove, d which issues, any extraneous matter which may have been A caustic of nitric acid, nitrate of silver, or caustic of potash, ıplied to the wound; a cold lotion be put over the part to prevent tion when inflammation begins; and if the pain and inflammation siderable, you should apply leeches, and follow them up with s and poultices.

39. With regard to the position of the limb, and the diet of the patient; the limb should be supported on an inclined plane, so that the blood shall gravitate towards the body; and all stimulating food or drink be carefully avoided.

40. When a puncture is made into a *theca*, suppuration is apt to ensue, when an early incision, by allowing the matter to discharge, prevents the serious effects which would otherwise follow. But if matter does not form, no incision may be required.

The treatment, therefore, must consist in endeavouring to prevent suppuration, by leeches and evaporating lotions, in the first instance: if matter forms, then open the abscess early, both with a view of making the punctured an incised wound, and to give a free outlet for the escape of the pus.

POISONED WOUNDS.

41. In treating of poisoned wounds, we shall refer the subject of hydrophobia, and the bites of venomous animals to another part of the work; and here only speak of poisoned wounds as occurring from *dissection*.

42. In dissections, pricks of the hand sometimes occur, frequently causing considerable pain and irritation in the course of the absorbents; swelling and suppuration of the lymphatic glands of the arm or axilla; and severe fever and constitutional irritation.

In many instances, however, surgeons wound their fingers in dissecting bodies, and no particular ill consequences ensue. The healthy and robust are said to suffer less frequently after such accidents, than persons whose constitutions have been weakened by hard study, excesses, pleasure, or previous disease.

43. The treatment you should have recourse to, is, immeiately to cleanse and suck the part, to free it from the virulent matter, and then, if necessary, use additional cautions, and ttend carefully to your regimen.

French surgeons advise the immediate cauterization of the wound with ome caustic potash, or liquid muriate of ammonia. In this country, caustics are occasionally used, but the more frequent plan is to soak the hand in warm water, put on an emollient poultice, and support the arm in a sling. Tonic remedies, such as wine, bark, and so on, are prescribed, and great attention paid to relieving the bowels.

44. The inflammation from punctures of the hand in dissecting, will continue a long time, and be resumed when it seems to be at an end.

Attention to the general health, and to the part, must therefore, be regarded closely for a considerable period after the injury.

GUN-SHOT WOUNDS.

45. Gun-shot wounds receive their name from the manner in which they are produced, being generally caused by hard, obtuse bodies, projected from cannons, muskets, or some other species of fire-arm.

In general, gun-shot wounds do not bleed much, unless large blood-vessels be injured; their circumference is often livid; and the shock, that attends their infliction, or the injury done to the nerves, may occasion in the limb, or part, a kind of torpor, sometimes extending itself to the whole system.

46. Dr. Hennen observes, the effects of a gun-shot wound differ so materially in different men, and the appearances are so various, according to the nature of the part wounded, and the greater or lesser force with which it has been struck, that no in-

variable train of symptoms can be laid down as its
concomitants.

**If a musket or pistol-ball has struck a fleshy part, without in
material blood-vessel, we see a hole, about the size of, or smalle
bullet itself, with a more or less discoloured lip, forced inwards
has passed through the parts, we find an everted edge, and a m
and larger orifice at the point.**

47. Gun-shot wounds, from whatever cause, whet
a musket-ball, cannon-ball, or shell, &c. are, in gene
tused wounds, usually attended with a deadening of
the solids, which ultimately sloughs, and thereby preve
by adhesion.

**This does not, says Hunter, always take place equally in ever
wound, nor in every part of the same wound; and the difference
arises from the variety in the velocity of the body projected; for
many cases, where the ball has passed with little velocity, which i
case with balls, even at their entrance, but more commonly at th
wounded by the ball, that the wounds are often healed by the first**

48. Gun-shot wounds, on account of their common
a part killed, do not, in general, inflame so readily
from other accidents; and this backwardness to inflam
found in proportion to the quantity of deadened parts.

**If, however, the ball has fractured some bone, which fracture i
has done considerable mischief to the soft parts, independent o
then there will be nearly as quick inflammation as in a compound
the same bone, because the deadened part bears no proport
laceration or wound in general.**

49. From the same circumstance, of a part bei
deadened, a gun-shot wound is often imperfectly unde
first; for, in the earliest period, in many cases, it is i
to know what parts are injured.

It not unfrequently happens, that some viscus, or a part of so

a part of a large artery, or even a bone, has been killed by the blow, hich does not show itself till the slough comes away.

50. Gun-shot wounds may have either one or two apertures, according as the ball has lodged, or passed quite through.

In some cases, the openings are diametrically opposite each other; in others they are not so, the direction of the ball being sometimes changed by the resistance, which it meets with from a bone, cartilage, or so on. The circumference of the aperture where the shot enters, is usually depressed; that of the opening, from which it comes out, elevated. At the entrance there is commonly more contusion than at the exit of the ball. The former opening is generally narrower; the latter wider and more irregular.

51. We have already hinted at the indefinite nature of gun-shot wounds, but Mr. Hunter attributes many of the varieties to arise from the difference in the velocity of the body projected.

52. If the velocity of the ball is small, then the mischief is less.

There is not so great a chance of their being compounded with fractures of the bones; but if the velocity is sufficient to break the bone it hits, the bone will be much more splintered, than if the velocity had been very considerable.

53. When the velocity is small, the direction of the wound produced by the ball, will, in common, not be so straight, arising from the easy turn of the ball.

If the velocity is great, the direction of the wound will be more straight, as the ball more easily overcomes obstructions, and therefore passes on in its first direction.

54. When the velocity is small, the deadened part or slough is always less; for, with a small velocity, a ball would only seem to divide parts, while, when the velocity is great, the contrary must happen.

From this circumstance it is, that the slough is larger at where the ball enters than where it comes out; and if the bal a great deal of resistance in its passage through, there will be v no slough at all at its exit.

55. The greater the velocity of the ball, the cleaner the parts.

56. Gun-shot wounds are attended with less ble most others; however, some will be attended with h more than others, even in the same part.

Bleeding arises from a vessel being cut or broken; but the bleeding arises from the manner in which this is done. If the directly across, and it is done by a ball passing with a considera it will bleed freely; if bruised, and in some degree torn, then less. When the velocity of the ball is small, the vessels will b torn, for they will have time to stretch before the continuity o give way; but if it is great they will bleed more freely, because make up for want of sharpness.

57. Velocity in the ball makes parts less capable than when it moves with a small velocity.

Therefore, gun-shot wounds in pretty thick parts are, in g of healing at the orifice where the ball enters, than at the ori passes out.

58. Having selected thus much, from Hunter, on ties produced by the velocity of ball; we will conc general outline of the treatment for gun-shot wounds.

59. *Treatment:*—In your treatment, you have t tions to fulfil:—first, to remove any extraneous bo may be in the wound; and secondly, to obviate infl and expedite the formation of pus.

60. *If* the situation of the ball, or any other extran

'rtained by examination with the probe, or with the urse may be had to the forceps in order to extract it; : prove ineffectual, the wound should be dilated.

ball have run superficially beneath the integuments, it may be ger; its course may, sometimes, be detected by a red line in tending from the external wound, and in this situation a simple often be sufficient for its extraction. If its situation cannot be :ained, little trouble need be taken upon the occasion, as nume- s prove that balls may remain imbedded in the animal solid ıcing injurious consequences.

ıas been customary to dilate all gun-shot wounds, in ıneous bodies are still lodged. Mr. Hunter objects to iminate dilatation, and lays down the following rules the propriety of dilating, and the period at which ɔn ought to be made.

ıd be slight, and extraneous bodies are lodged in it that may ısequent irritation, it should be immediately dilated; as also ery is to be secured; where there has been a fracture, and it ssary to remove detached pieces of bone; or where a protruded replaced:—But if the injury is severe, the dilatation should be l the first inflammation is over, as by adding an incised to the nd, two sources of irritation would exist instead of one.

ır second indication is to prevent inflammation, and suppurative process. This is to be answered both by local treatment.

iphlogistic regimen; repeated venesections; cooling purgatives, ed antimony; saline medicines; opium and antimony; and es proper for inflammation. Your local means must consist in on of leeches; hot fomentations, and if the inflammation be tations of poppies and hemlock; and warm cataplasms. Tur- :he diluted solution of nitric acid, have also been advantageously

:r suppuration has taken place, you must support the ! *apply a stimulating* lotion to the part.

Peruvian bark and the ordinary tonics; opium in large doses; ı
rishing diet, as the case may require. The diluted solution of nitr
most recommended as a local stimulus.

64. *Amputation:*—Where the injury has been so ext
to require amputation, much dispute has taken place co
the period proper for performing it.

A state of health is by no means the most calculated to endure
cess an important operation, and experience teaches us to wav
formance of amputation, till the first inflammation has subside
from the greatness of the injury, it may be expected to destroy the

65. The circumstances which call for an immediate
are numerous.

Namely, when there is such destruction of the soft parts as to d
circulation of the blood; the partial division of an artery when it is
and entangled in the fractured and swollen parts, that it cannot b
bad fractures high up the os femoris; also when the ball has pass
the extremity, fracturing the bones, and lacerating extensively the
ing parts, the mischief being too great for the limb to recover itse
other instances.

66. When it is determined on to amputate immedia
the infliction of the wound, the antiphlogistic system of t
is highly necessary.

It will be advisable to allow a considerable portion of blood to es
the stump during the operation; or, which is better, to bleed freel
arm, as soon as the pulse indicates that reaction, which, more or
always follow so violent and so sudden a shock.

INDIVIDUAL WOUNDS.

1. Having gone through a cursory description of th
and treatment of incised, punctured, contused, lacerat

d, and gun-shot wounds, we shall next commence some ral observations on wounds of individual parts.

WOUNDS OF ARTERIES.

1. Wounds of arteries may be either incised, lacerated, con- sed, or punctured.

2. *Incised:*—When an artery is cut or divided, an impetuous morrhage of florid blood takes place, which, if the artery large, whizzes through the wound. It flows in jets or lsations.

The brain soon ceases to be supplied with blood, and fainting is produced; sation and volition become suspended; and the action of the heart is in great measure suppressed; the flow of blood from the wound becomes ch diminished, and sometimes entirely ceases.

3. Your treatment, in cases of this kind, must depend on the essel being cut in part, entirely through, or much injured.

4. The treatment, when a small artery is divided in an ex- remity, is to apply a tourniquet to compress the trunk from hich it proceeds.

This, with gentle pressure on the wound, for a short time, will generally mand the hemorrhage, when the edges of the wound may be approxi- mated, and union promoted; leaving on the tourniquet, so as to keep a oderate pressure on the trunk.

5. When the artery is large, it is necessary to make an inci- sion in the direction it takes, so as to expose the wounded por- tions, when a ligature must be placed above and below on each portion of the vessel.

The ligatures should be small, and one of the ends removed, as first recommended by Dr. Vetch, after their application.

6. If an artery is not completely divided, the natural retraction does not take place, and a coagulum is formed with much difficulty.

I should, therefore, advise you, in such cases, to completely divide the vessel, when its retraction will engage a coagulum to form around it; but if the artery is large, a ligature must be applied.

7. *Lacerated:*—Arteries when they have been lacerated, bleed comparatively very little.

This arises either from the cellular tissue being drawn over the mouth of the vessel, and thereby forming a ligature; or from the falling together of the side of the artery, so as to render its canal impervious.

8. The most approved treatment is to apply ligatures, if the vessel is large; otherwise, when the powers of circulation are restored, there will be danger of hemorrhage.

9. *Punctured:*—Punctured wounds of arteries are followed with a tumour, bearing every character, and requiring the same treatment, as aneurism.

Thus, the external wound being small, the blood does not readily escape, and therefore coagulates in the cellular tissue, and forms a swelling there, which gradually increases in size as the blood issues from the wound in the artery; the impetus of the blood causes a pulsation; and the cellular membrane, around the extravasated blood, being condensed, forms a sac, which impedes the evolution of the swelling. The external wound heals, and thus an aneurism is formed.

10. This species of wound of arteries is commonly the result of bleeding at the arm, and produces, as we have just described, an aneurismal swelling, more fully mentioned under the denomination of *aneurismal varix.*

11. *Contused:*—Gun-shot wounds and severe bruises sometimes destroy the vitality of a portion of an artery, which is afterwards followed by sloughing, and, if great care is not taken, by fatal hemorrhage.

You will find that the slough will not separate until from eight to ten days, or more, after the wound has been inflicted; the slough opens the vessel upon its side, and no retraction ensuing, the bleeding is unrestrained.

12. In these cases it is required that the patient should be kept at rest until the sloughing process be completed.

He must likewise be instructed in the tightening of a tourniquet, which must be applied, and left constantly upon the limb, until all the sloughing has ceased.

WOUNDS OF PARTICULAR ARTERIES.

13. *Arteries of the Scalp:*—Wounds of these arteries require a complete division of the injured vessel, and the application of pressure.

By the first, retraction is permitted, and future bleeding prevented; by the second, the present hemorrhage is suppressed.

14. *Carotid Artery:*—The wounds of this artery are usually so speedily fatal, that surgery is rarely able to preserve life.

It has been secured for aneurism, under which subject the operation is described. I would also here observe, that the operations enumerated under the same head, are, for the *abdominal aorta*, *internal and external iliac arteries*, *femoral artery*, *arteries of the scalp*, and the *subclavian*.

15. *Axillary Artery:*—In taking up the axillary artery, when it is wounded, Scarpa recommends the opening made to expose the vessel, should be sufficiently extensive; and that the vessel should be raised from the plexus of nerves before it is secured.

a portion of the great pectoral muscle, into the axilla, the surgeo through the lower edge of this muscle, and enlarge the wound, o tory, or his finger, so as to bring fairly into view the injured p artery. The thoracic arteries divided in the operation, must be im tied. The clots of blood are then to be removed, and the bott wound cleaned with a sponge, by which means the opening in th artery will be more clearly seen. Two ligatures will be required; the wound of the artery, and the other below.

16. *Brachial Artery:*—In tying the brachial artery, only one circumstance to bear in mind, and it is this; t is accompanied by the median nerve: now, if you shoul this in the ligature, it would either destroy the patient' cause paralysis of the limb.

Sometimes, in wounds of the brachial artery, the injury may be by a slight bandage, and a thick dossil of lint as a compress. Bu rism forms, the tourniquet should be employed, and if this does n a ligature must be applied. The direction for the incision is the i of the biceps muscle, and this cut almost immediately lays bare t nerve.

17. *Ulnar Artery:*—The wounds of this artery ar at the lower part of the forearm, where the vessel is

and the other below, to prevent hemorrhage from the free anastomosis with the radial artery.

18. *Radial Artery:*—This artery is much more frequently wounded than the ulnar, being, in every respect, more exposed.

In securing the radial artery, let your incision be made on the radial side of the tendon of the flexor carpi radialis, and you will immediately find the artery close to its edge. The application of two ligatures is also necessary. Instead of putting ligatures on these vessels at the wrist, for aneurism, or wounds of the palmar arch, it has been recommended to employ pressure, by means of cork folded in lint, and bound down by a bandage. This practice, when used, leads to great inflammation and irritation, and I would advise you against using pressure generally, and more especially as regards the ulnar and radial arteries, as they can be so readily tied.

19. *Palmar Arteries:*—Wounds of the palmar arteries are very frequent, but generally the hemorrhage may be stopped by steady and continued pressure, by means of a compress and bandage, and by a tourniquet on the brachial artery. Cold applications, and the position of the limb will also materially assist.

Should these means fail to arrest the bleeding, and if the openings of the divided vessels cannot be easily found, it will be necessary to secure the ulnar or radial arteries, or both; as from the very free communication of these vessels, the securing of one only, will not, in many cases, prevent further bleeding. It will be best, however, in wounds of the superficial palmar arch, under such circumstances, first to put a ligature upon the ulnar artery, and then try pressure again, before the radial is taken up; which should not be done unless a troublesome hemorrhage continues. On the contrary, should the deep palmar arch be the seat of injury, and it become necessary to secure an artery, the radial should be first tied, and afterwards, provided the bleeding does not stop, the ulnar should be likewise secured.

20. *Femoral Artery:*—If this vessel is wounded high up in the groin, the finger must be thrust into the wound to stop the bleeding, until a compress can be applied upon the pubes, and the artery be secured.

21. If the femoral artery is wounded in the middl thigh, a large swelling will sometimes immediately fo the artery will be deeply situated under a large coagulum

In these cases, a free incision must be made to give the surg room to proceed in securing the wounded vessel, a tourniquet applied. The direction of the incision will be that required in the for popliteal aneurism, only it must be more extensive. The coagu is then exposed must be scooped out from the wound by the finger parts be cleanly sponged. The tourniquet is then to be loosene aperture in the vessel will be directly seen, when the tourniquet is t tightened, and two ligatures are to be placed on the artery, one a the other below the wound, an end of each thread being cut off; th the wound are to be approximated so as to favour the union by adh

22. *Popliteal Artery:*—This vessel is so protected condyles of the os femoris, and so concealed behind tl that it is rarely lacerated.

In tying the artery in the ham, there is some danger of incl sciatic nerve, as it is placed above the artery in cutting into the ha of course must be carefully avoided: the artery must be drawn fro where the large nerve is placed upon it.

23. *Anterior Tibial Artery:*—This vessel is rarely at the upper part of the limb, but frequently at the lo middle portions; consequently, it requires to be secur ferent parts of its course.

24. The anterior tibial artery passes forward betw bones of the leg, about an inch below the upper hea fibula.

In order to take up the vessel in this situation, a free cut mu through the fascia, extending between the heads of the tibia and f incision is then to be continued more deeply at the edge of the longus, following the fascia between this muscle and the origin tensor digitorum communis. The artery will be met with on the in ligament.

Another situation in which this artery is sometimes re- l to be secured, is a little above the middle of the leg.

finger is to be passed along the outer side of the spine of the tibia, and adth of the tibialis anticus muscle is to be ascertained. Along the argin of this muscle, an incision is to be made through the integu- nd fascia, two inches and a half in length. The knife is then to be ced between the outer margin of the tibialis anticus muscle, and the r longus of the great toe. In this space, at the depth of about an he anterior tibial artery is situated.

Posterior Tibial Artery:—Wounds of this vessel are not equent, but they sometimes occur, and render operations ary.

unds of this artery at the upper part of the limb, I should first apply quet, then place the limb in a bent position, so as to relax the gas- ius muscle: this I should raise from its attachment to the tibia, so as se the artery and its accompanying nerve, which I should be careful de; I should then put two ligatures on the wounded vessel, and rds carefully close the wound and unite it by the first intention.

The laying bare the posterior tibial artery behind the lus internus, is also quite easy.

cision, about two inches long, is to be made between the internal us, and the tendon Achillis, down to the posterior surface of the ity of the tibia. At this depth, the tendon of the tibialis posticus , and that of the flexor communis digitorum pedis, run, as in a fur- Along with these two tendons, but little nearer to the os calcis, the r tibial artery descends to the sole of the foot.

Plantar Arteries:—For a wound of either of these arte- I should first try what the application of a bandage, with a ess upon the wound, and tourniquet on the thigh, would

ese means failed, I should tie the posterior tibial artery, rather than n for the plantar vessel, because of the depth and numerous tendons rves in which it is placed.

WOUNDS OF VEINS.

1. Wounds of veins, like those of arteries, are attende a flow of blood, but instead of being ejected in jets, the he hage is a continued regular stream.

Venous hemorrhage, as Mr. Lawrence observes, is much less for than that which proceeds from wounds of arteries. Indeed, under any circumstances do we entertain much alarm at the flow of bloo takes place from the wound of a vein, and we find, in general, t natural powers of the constitution are adequate to arrest such hemo As soon as the flow of blood from a vein is left to itself, coagulum f the orifice of the wound in the vessel, and the opening becomes clo this does not take place of itself, pressure on the wounded part is arrest the bleeding, and to give occasion to the formation of a c within the vessel, which will permanently stop the hemorrhage.

2. In treating wounds of veins, the first grand objec empty the vessel, as much as possible, by the position limb, and to use appropriate pressure.

The position of the limb should be such as to allow of the gravit the blood to the heart; in the arm, an inclined plane; in the leg, the for a fractured tibia. A roller should be applied from the extreme the limb, to the wound, wetted with the liquor plumbi subacetati and spirit, so as to approximate the sides of the vein by gentle pres necessary, leeches should be freely applied, and if suppuration take fomentations.

WOUNDS OF THE ABDOMEN.

1. Wounds of the abdomen are of three kinds, viz. sup only; those in which the cavity is opened, but the visce injured, and those in which some of the viscera are injure

2. With respect to the first and second of these, very extenive wounds are often recovered from.

This last circumstance arises from the peculiar manner in which the intesnes often glide away from the sharpest instruments.

3. The first thing which the surgeon is anxious to know, hen he is called to a wound of the belly, is, whether the wound superficial only, penetrates the cavity of the abdomen, or hether any of the viscera are injured.

The peculiar symptoms of wounds into this cavity, are an immediate unirsal coldness and paleness, with nausea and faintness.

4. When the wound is narrow, and the viscera do not proude, it is sometimes a difficult point to know whether the ivity of the abdomen is penetrated or not.

An opinion, however, may be formed, by carefully examining the wound th a finger, or a probe; by observing, if possible, how much of the weapon stained with blood; considering the direction in which it was pushed; the antity of blood lost, the state of the pulse, and whether any bile, fæces, or ier fluids, escape from the orifice of the wound.

5. When the wound is sufficiently large to admit the finger, u may always learn whether the injury extends into the abdon, because the smooth lining of that cavity, and the contained wels, may be easily felt.

There is one chance of deception, you must bear in mind, arising from the sibility of mistaking the inside of the sheath of the rectus muscle for the vity of the peritoneum; and when the examination is made with a probe, rticular caution should be used in forming a judgment of the nature of the se; for the parts are so soft and yielding, that a very little force will make e instrument pass a considerable way inward.

6. The diagnosis, when a wound is actually made into the ivity of the abdomen, and when any of the viscera are injured,

will be commonly attended with symptoms, more or less indicative of the extent of wound inflicted.

7. *Treatment:*—Where there is only a superficial wound, you should endeavour to procure union, by adhesive plaster and compress alone; but if necessary, by the introduction of sutures.

8. When the cavity of the abdomen is penetrated, Sir A. Cooper thinks it best to make interrupted sutures; the needle should pass through the skin and muscles, but not the peritonæum.

If the muscle be not included in the ligature, a hernia is sure afterwards to form; and, if the threads penetrate the peritonæum, it adds much to the danger of abdominal inflammation. Between the sutures, strips of adhesive plaster, or of lint dipped in blood, should be applied, and the patient should be freely bled from the arm. If the local inflammation be great, leeches should be employed; purgatives must be avoided, and food must not be given for several days.

9. When a man is stabbed, or shot in the belly, and none of the bowels protrude, Dr. Hennen recommends the patient to be kept as quiet as possible, copious and repeated bleeding, anodynes, lowest fluid diet, and light superficial bland dressings to the part.

In the event of severe pain and swelling of the belly coming on, leeches, fomentations, the warm bath, and emollient poultices will be necessary, and the most rigorous employment of antiphlogistic remedies.

10. I might here pass on to speak of those wounds of the abdomen, where some important viscera are injured; but as wounds of this cavity, extending to the stomach, intestines, and so on, are very rare, I shall not consider them essential to the limits of a Manual.

It will be as well, however, to remark, that in these cases the danger is much lessened if the wounded portion of the viscus protrudes through the opening in the parietes; for, if not, they are generally fatal.

WOUNDS OF THE THORAX.

1. These are also of three kinds, viz. superficial only; wounds penetrating the parietes, and wounds of the viscera.

The thorax, I would, however, observe, is subject to all kinds of wounds; but their importance particularly depends on their depth. Those which do not reach beyond the integuments, do not differ from common wounds, and, when properly treated, are seldom followed by any bad consequences. On the other hand, those which penetrate the cavity of the pleura, even by the slightest opening, may give rise to alarming symptoms.

2. Many plans and modes of procedure have been laid down to ascertain whether the cavity of the pleura is wounded or not.

For a general rule you might expect, where the cavity is penetrated and the viscera uninjured, extreme anxiety and difficulty of breathing, great irritation in the larynx, cough, sense of suffocation, and so on. But if the viscera are wounded, blood will be coughed up, of a florid red colour, frothy and mixed with air; breathing difficult; in inspiration, air will be heard to issue from the external wound with a hissing noise, and to rush in with a similar sound during expiration; emphysema very generally takes place, first beginning in the cellular membrane of the thorax, and often spreading to a very great extent.

3. *Treatment:*—In wounds of the parietes only, your object must be to promote as much as possible, the adhesive inflammation to close the wound externally.

Should the hemorrhage be considerable, it will most likely proceed from a divided intercostal artery; you should press your finger on the orifice of the vessel, until the disposition to bleeding ceases. The wound is afterwards to be united by *suture; in making which*, care is to be taken that the ligature pass through the integuments and muscular substance only, without penetrating the pleura.

4. The treatment necessary for wounds of the viscera, may be said to rest entirely in the treatment of *wounds of the lungs.*

When the lungs are injured, the patient labours under all the symptoms we have lately mentioned, as characteristic of wounds to the thoracic viscera.

5. Wounds of the lungs prove dangerous in three ways; viz. from hemorrhage, from inflammation, and from emphysema.

6. If any large branch of the pulmonary artery is wounded: if it is injured by a sword or knife, it bleeds very freely; but if by a broken rib, very little, as it will then have the nature of a lacerated wound.

In either case, the patient must be bled freely to prevent the continuance of the hemorrhage from the wounded lung, and the opening must not be closed in the parietes until all bleeding from the lungs has ceased, otherwise the blood will remain in the cavity of the chest, and produce irritation and inflammation.

7. The second danger is from inflammation of the lung, and effusion into the cavity of the pleura.

8. Inflammation of the lungs is to be guarded against by large and repeated bleedings, determined by the dyspnœa and hardness of the pulse.

There is but little danger of bleeding too much in one of these cases, as it is an object not only to diminish the force of the circulation, but the quantity of blood in the pulmonary vessels.

9. If effusion takes place, it is the result of neglected inflammation, or of having closed the external wound too early. In

se, it is a purulent secretion ; in the other, a bloody

n into the chest, it is right to perform the operation of para-
he thorax, to draw off the pus or bloody serum which has col-
pleura.

physema, the third consequence of wounded lungs, is
ous than the others. It sometimes extends to the face,
e neck, and also a large part of the trunk.

atment, a bandage is to be placed so tight around the chest as to
rattling during a deep inspiration; the patient is to lie on the
le, and punctures may be made into the cellular tissue, where it
led, but not so large as the wound made in bleeding.

all cases of wounds of the chest or lungs, rest is essen-
ssary to recovery.

WOUNDS OF THE THROAT.

mpts to commit suicide are the usual causes of these in-
l usually one of the following parts suffer ; the pharynx,
, the trachea, or the œsophagus.

ent should here call to mind a recollection of the parts. If the
ttle elevated, its distance from the sternum is about nine inches.
e inches below is the thyroid cartilage, and the space has the
the os hyoides and tongue on the fore part. Second,—in the
ision is the larynx, with the pharynx behind it. Third,—in the
part is the trachea before, and the œsophagus behind. On the
se parts are situated the carotid arteries, which are divided near
des. The internal jugular veins are also placed laterally. The
ccompany the carotid arteries, and the great sympathetic nerves
omewhat nearer the vertebræ.

2. When persons cut their throats, they do not often divide the carotid artery, owing to their incision being made high up in the neck, where this vessel has attained a very backward situation.

When any serious hemorrhage does arise, it is sometimes from the lower branches of the lingual artery, but most frequently from the superior thyroideal arteries. Such arteries may occasion a fatal bleeding, which, indeed, would more frequently be the event than it actually is, did not the patient often faint, in which state the bleeding spontaneously ceases, and gives time for the arrival of surgical assistance.

3. *Wound above the Larynx:*—This is the most frequent seat of injury, which is inflicted whilst the chin is elevated.

4. It is characterised by air and blood issuing from the wound, with frightful impetuosity, mose especially when the patient coughs.

The arteries which bleed freely are the sublingual that pass just above the os hyoides, on each side of the tongue; but sometimes the external carotid arteries are divided, when, from the rapid hemorrhage, death is almost immediate.

5. The wound is commonly, in itself, but little dangerous.

When persons die shortly after its infliction, it is frequently from the fever which has led to the commission of the act, if it be not from hemorrhage.

6. In your treatment of a wound above the larynx, position must be carefully attended to; the lips of the wound kept together by sutures; and some cooling application be used to the patient's mouth.

The first indication is to be answered by bringing the head down upon the chest, and confining it in that position, in order to prevent a separation of the edges of the wound. The second, by putting three sutures in the integuments only, the more effectually to guard against any disturbance of the approximated edges, what may otherwise, from the constant motion of the patient during irritability or delirium, be produced. And the last indication, by keeping the mouth cool and moist, with a portion of lemon dipped in water.

7. Your after-treatment must be directed to the appropriate nourishment for the case, and the removal of the sutures.

The patient should be chiefly supported by glysters of broth and gruel, to which opium should be added if they quickly return; and when the fever has subsided, the addition of port wine should be made. When food is given by the mouth, a small quantity of solid matter excites less irritation than fluid: and a small portion of jelly is the best. The sutures should be removed in a week, and adhesive plaster be substituted for them.

8. *Wound into the Larynx:*—This wound is either into the thyroid or cricoid cartilages, or into the ligament which unites them.

A wound confined to the cartilages of the larynx, or to the ligament uniting them, is not dangerous, and by far the greater number of these cases do well.

9. With wounds in this situation, the air rushes through the wound in expiration, and violently in coughing, and is also inspired through it.

The person is not able to speak, unless the aperture be closed by pressure; but the food does not pass from it.

10. The treatment of these cases, consists in the approximation of the parts by position, and in the application of adhesive plaster to retain the edges in contact.

When the wound is inflicted with excessive violence, or by a stab, the pharynx may be wounded, as it is situated behind the larynx, and then the treatment of the wound is to be similar to that of the wound above the larynx.

11. *Wound below the Larynx:*—When the wound is inflicted within three inches of the sternum, it is more dangerous than in any other *situation.*

The trachea is here on the fore part, the œsophagus behind, and the carotid arteries are situated close to the trachea, more especially the right. The thyroid gland crosses the upper part of the trachea, and its veins cover the fore part.

12. If the trachea is cut, the air rushes through the wound both in expiration and inspiration. The blood gets into the trachea, and excites a violent coughing, by which a bloody froth is forcibly ejected, but the food or liquids do not pass out through the aperture.

The external opening in these cases is generally small, as the wound often arises from a stab, and the consequence is, that the blood does not freely escape, but lodging in the bronchia, adds considerably to the dyspnœa.

13. In the treatment of wounds of this kind, the first object is to stop the bleeding; and if the wound is not sufficiently large to lead to the easy discovery of the source of the hemorrhage, an incision should be made, in a longitudinal direction, to expose the mouths of the vessels.

If the trachea be widely opened, pass a needle and ligature through the cellular tissue, upon its surface, which, from its firmness, will support the ligature, and thus bring the edges of the aperture into contact; but do not penetrate the trachea itself with the needle. Thus securing the trachea, bring the edges of the external wounds together by bending the head forward; but do not apply adhesive plaster, as it prevents the escape of air and blood in coughing, produces additional difficulty of breathing, and occasions emphysema.

The ligature upon the cellular covering of the trachea, is to be separated by the ulcerative process, which will generally be effected in a week.

14. When the trachea is deeply cut, the œsophagus is sometimes wounded; and if the injury be extensive, death will generally ensue; but a stab into the œsophagus, or a small wound, may be recovered from.

After an injury of this kind, the wound into the trachea is to be treated in the former instance; by which, the opening into the œsophagus will be oximate: all food, liquid or solid, must be avoided, and the patient orted, as long as nature can bear it, by glysters.

5. In the treatment of these wounds, I object entirely to introduction of tubes into the pharynx and œsophagus, as se than useless.

fact, they are highly injurious, by the cough which they occasion, by r irritating the wound; and if adhesion or granulation have taken place ose the wound, such tubes tear it open again and destroy the process of ration.

WOUNDS OF JOINTS.

. By a wound of a joint, surgeons mean a case where capsular ligament is penetrated or divided.

he injury is often attended with a division of the lateral, or other liga- its, and sometimes also with that of the cartilages and bones.

. These accidents are but trivial, or very dangerous, ac- ding as the surgeon is directed by proper principles, or is orant of the treatment which they require.

. If the patient has a poultice applied, or if the utmost ention is not paid to the immediate closure of the wound, ammation of the synovial membrane arises, and suppuration ues.

he most violent constitutional irritation succeeds; shivering, heat, flush- and profuse perspiration; generally great swelling and excessive pain in joints. Abscesses form in different parts of the joint, one succeeding her, until the strength becomes exhausted.

4. In young and healthy constitutions, these wounds in the largest joints are recovered from ; but in aged and weak persons they destroy life.

Recovery from these injuries, when inflammation has followed, is by adhesion, so as to destroy the synovial surface; or else by granulation, when a partial or general ossific anchylosis is the result.

5. All ill effects from wounds of joints may be prevented by care and skilful treatment.

When called on to treat a wound of from one to two inches extending into the knee-joint, you must, with a fine needle and thread, pass through the skin only, and bring the edges of the external wound together. Adhesive plaster should not be placed immediately on the aperture, as it is apt to separate and prevent union; you should therefore dip some lint in blood, put it over the surface of the wound, and place the plaster over it; then cover the surface of the knee with soft linen, dipped into a lotion of the liquor plumbi sub-acetatis and spirit. Afterwards the limb is to have a splint placed behind it to prevent all motions of the injured joint, and to secure perfect rest.

6. Your after-treatment must be principally directed as the circumstances of the case may require.

Purging medicine should be, as much as possible, avoided, and a rigid abstinence enforced. In eight days the threads may be cut and drawn away, but the adhesive plaster and lotion should be continued. Three weeks should elapse before the patient be allowed to quit the bed.

7. If inflammation and suppuration should follow a wound into the joint, the ordinary remedies must be employed.

If the former, leeches and evaporating lotions should be used, and if the inflammation run high, the patient should be freely bled from the arm. If the suppurative process be produced, fomentations and poultices are required locally, and the use of the liquor ammoniæ acetatis and opium, internally.

8. I would also have you remember, that the fungous granulation, which forms at the wound, is not to be disturbed, as it is formed by nature to close the aperture.

). When a limb is stiff from inflammation and adhesion, ly motion of the joint is required, and its use may generally restored. A joint thus circumstanced is not injured but bene- d by motion, whilst in a chronic or scrofulous inflammation joint, rest is more essential to its cure.

this case, therefore, a patient should not only use the limb in common cise, but he should sit upon a high table, and employ the muscles for length of time at once, in flexing and extending the limb.

0. In removing loose cartilages from joints, it is proper to draw down the skin to render the aperture afterwards ular.

eration:—The cartilage is fixed by an assistant, an incision is made over fter the skin has been drawn an inch to one side, then as soon as the sur- of the cartilage is well exposed, it jumps from its situation, the skin is o, and no direct opening remains communicating with the joint. The -treatment is the same as in simple incised wounds, only a suture is not ired.

WOUNDS OF TENDONS.

First:—The division of the *tendo Achillis* is most frequent, is usually occasioned by a wound from an adze, or from a sithe.

whatever way it has been divided, there is a sudden inability, or, at , an extreme difficulty either of standing or walking. Hence the patient down, and cannot get up again: besides these symptoms there is a very ible depression between the ends of the tendon, which depression is in- ed when the foot is bent; and diminished, or even quite removed, when ot is extended.

The principle in the treatment is to approximate the ends e tendon by raising the heel, extending the foot, and bending the knee; the external wound (if there is one) is then to be carefully brought together by a small suture, in order that it may be healed by the adhesive inflammation.

To effect the object at view, a shoe with a heel one inch and a half in height, is to be placed on the foot of the injured limb, and a strap is to be carried from the heel of the shoe to the calf of the leg, then a roller is to be lightly applied upon the upper part of the leg, to confine the strap and to keep the foot extended. All pressure at the part should be avoided, only an evaporating lotion being placed over it. The patient is to be confined to his bed until the wound be healed, and then he may be allowed to walk a little with a high-heeled shoe; the heel of which is gradually to be lowered until it is even with the heel of the other shoe.

Should much inflammation arise during the cure, the limb must be elevated to prevent all gravitation of blood, and leeches should be applied near the wound.

3. *Second:*—A rupture of the *tendon of the extensor muscles of the leg* requires nearly the same kind of treatment as a fracture of the patella.

However, pressure exactly on the wounded part of the tendon should be avoided, the limb should be kept extended and somewhat raised; a bandage might be put round the thigh, and the antiphlogistic treatment be at first adopted. In the course of two or three weeks, the surgeon should cause the joint to be very gently moved, without any muscular exertion on the part of the patient himself.

4. *Third:*—If the tendon of the *triceps extensor cubiti* be divided, the limb is to be kept straight; cold applications for a few days, and, if necessary, the antiphlogistic plan adopted.

I would here observe, it is only necessary to consider whether the divided tendon, in any case, belongs to a flexor or extensor muscle, to know what is to be done to assist its union.

LACERATED TENDO-ACHILLIS.

ny tendons are liable to be lacerated by the violent muscles with which they are attached; but more ly the tendo Achillis, and may be either complete or

: note, as just delivered, is also applicable in the present case.

mplete Laceration:—This accident to the tendo Achillis ed either by a violent effort of the muscles, as in jump-ancing, or by an unexpected extension of the tendon.

whatever way the accident may be produced, the treat-uired will be to extend the foot, and bend the knee to ends of the lacerated tendon to approximate.

ay the tendon soon unites by the adhesive process, and the use of afterwards gradually restored. Some degree of thickening of the a long time remains, and the patient halts a little in rapid motion. n of the foot and leg is to be maintained in the same way as when is divided by incision, and an evaporating lotion should be em-fter the union, the same precautions are to be observed with he use of the high-heeled shoe.

rtial Laceration:—A partial laceration of the tendo nd gastrocnemius muscle is an accident of very frequent ce.

in running or walking fast, or if his foot slips backward when it dvanced, sometimes feels as if he had received a severe blow ack of the leg, and is immediately unable to walk, but with the fficulty, and with the foot extended. The cause of this feeling is n of some fibres of the tendo Achillis, or of the gastrocnemius ere it joins the tendon. There is great tenderness upon pressure owing day, with some echymosis, which daily increase, until the limb becomes considerably discoloured. The least attempt to bend the foot is accompanied with great pain, and followed by swelling of the leg and ancle.

5. A similar treatment to that recommended for division or laceration of the tendon, is requisite for the cure of this injury.

When the patient can bend the foot without pain, then the high-heel shoe must be worn, and the heel be gradually lowered as in the previous cases. From three to six weeks are required to effect a cure.

HEMORRHAGE.

1. Hemorrhage may occur both from arteries and veins; when the former, the blood is of a bright scarlet colour, and gushes from the vessel *per saltum*, in a very rapid manner; if the latter, it is an even unbroken stream, and is of a dark purple red colour.

Mr. Samuel Cooper remarks, it is of great practical use to remember these distinguishing differences, between arterial and venous hemorrhage, because, though in both cases the oozing of blood may be equal in quantity, yet, in the latter instance, the surgeon is often justified in bringing the sides of a wound together, without taking farther means to suppress the bleeding, while it would not be proper to adopt the same conduct, were there an equal discharge of arterial blood.

2. Dr. Jones describes arteries to have, in particular, three important capacities, which tend, most materially, to prevent hemorrhage from these vessels.

First:—If an artery be divided, the divided parts owing to their elasticity, recede from each other, and the length of the cellular substance, connecting the artery with the sheath, admits of its retracting a certain way within the sheath.

Second:—When an artery is divided, its truncated extremities contract greater or less degree, and the contraction is generally, if not always, manent.

hird:—Arteries are furnished with arteries, veins, absorbents and nerves; ructure, which makes them susceptible of every change to which living ts are subjected in common; enables them to inflame, and to pour out gulating lymph, by which the injury is repaired, or the tube permanently sed.

Many opinions have, from time to time, been advanced to lain the means by which nature stops arterial hemorrhage.

r. Jones attributes the cessation of bleeding to the effusion of blood in surrounding cellular membrane, and between the artery and its sheath; in particular, the diminished force of the circulation from loss of blood, the speedy coagulation of this fluid under such circumstances.

The suppression of hemorrhage by the natural means is, netimes, more easily accomplished when an artery is comtely divided, than when but merely punctured, or partially ided.

ompletely dividing a wounded artery was practised by the ancients for stoppage of hemorrhage; the moderns frequently do the same thing, a bleeding from the temporal artery proves troublesome.

If hemorrhage from an artery does not abate from natural ses, surgical aid must, of necessity, be given.

pressure is the most rational means of impeding hemorrhage, so it is the t effectual; and also all the plans, employed for this purpose, are only lifications of it. The tourniquet, the ligature, the application of a roller compresses, even agaric itself, says Mr. S. Cooper, only become useful he suppression of hemorrhage, on the principle of pressure. The cautery, stics, and styptics, which are likewise used to prevent bleeding, act in a erent way.

6. Referring the student to more detailed accounts of the ture and application of these means, I shall only add one obrvation on the proper manner of using pressure.

When an artery is the wounded vessel, the pressure should be made on the side towards the heart, the blood flowing from that organ to the wounded part. The current of blood in the veins, running in the opposite direction, requires the pressure to be applied to that side of the wound, which is most remote from the heart.

HEMORRHAGE FROM ULCERS.

1. Mr. Abernethy has observed, that occasionally with ulcers, a sort of increased action is established, which produces a hemorrhagic disposition in the newly formed vessels of the part; and that bleeding also occurs from the complete relaxation, or weakness of the vessels.

Various methods have been recommended for the purpose of restraining such hemorrhages; styptics, pressure, and so on have been used, but as to styptics, Mr. Abernethy does not like them, they are, says he, irritating applications, and frequently do more harm than good. When the hemorrhage arises from increased action, lessening the temperature of the part will generally succeed, and give at the same time something to act on the bowels. If it arise from the second cause, the constitution must be improved generally.

TETANUS.

1. Tetanus is a more or less violent and extensive contraction of the muscles of voluntary motion; attended with tension and rigidity of the parts affected.

It begins generally in the muscles of the jaw, and when it is confined to this part of the body, it is called *trismus*, or *locked jaw;* when all the body is affected and becomes rigid, but retains its ordinary straightness, the case amed *tetanus*. When the muscles at the back of the neck stretch the d backwards, it is called *episthotonos*. When the body is bent forward, called *emprosthotonos*; and when the tension is confined to the muscles ne side of the body, it is denominated, *pleurosthotonos*.

2. Mr. Lawrence recommends the division of tetanus into the *iopathic*, or that which is produced from internal causes, and *traumatic* being that which is the result of a wound.

Ie observes, the progress of the affection differs in rapidity in different innces, and hence it is divided into *acute* and *chronic*; of which division does not approve. Baron Larrey on the other hand adopts it, adding, t the first is exceedingly dangerous and usually fatal, while the latter, on ount of the more gradual progress of the symptoms, affords more oppor- ity of being successfully treated.

3. Setting aside the absolute importance of the division into *ute* and *chronic*, we must treat of tetanus as it generally esents itself to the notice of the surgeon.

4. Traumatic tetanus derives its origin from the infliction of ounds; and, it is observed, to arise more particularly in con- quence of wounds of the extremities.

It is produced most commonly, in consequence of contused, lacerated, or ctured wounds; and it has been supposed to arise, more especially, from h wounds as are attended by injury, with division, laceration, or puncture nerves.

5. Whether injury to the nerves is the origin of tetanus is not t faithfully authenticated; but Larrey is disposed to favour is supposition.

A partial division of a nerve has often been suspected as a cause; but as e nerves must be imperfectly cut through in almost every wound, and yet nus does not arise, the reality of this cause is doubtful. Besides, if it re true, the cure would be easily effected by making the division of the ve complete, which experience contradicts. Mr. Abernethy supposes it e a muscular affection.

6. Tetanus will occur in all states or stages of a wound.

It may happen when a wound is in an inflamed or sloughing state; it may happen when a wound is going on very favourably towards healing, and when healing is considerably advanced.

7. It is not the immediate consequence of a wound; it usually comes on some days after the occurrence of the injury, and often a considerable number of days after it.

Mr. Lawrence states from five to fifteen days as the ordinary limit; and if the patient have no affection of this kind for the space of about three weeks after the accident, he considers the case free from all danger of tetanus.

8. *Symptoms:*—Tetanus, in the first place, shows itself in the muscles of the jaw, and those that are concerned in deglutition.

The patient finds a stiffness in the movement of the jaw; he experiences an uneasiness in swallowing, and he soon finds that he has a difficulty in separating the teeth for the admission of food into the mouth. About the same period, a pain begins to be felt behind the sternum, and this pain extends from the pit of the stomach towards the vertebral column. The muscles of the back of the neck begin to be affected by the spasm; subsequently those of the back generally; then the muscles of the abdomen, and the abdomen becomes as hard as a board; then the muscles of the limbs, and lastly, those of the face. When the muscles of the face are affected with tetanic spasm, the features are drawn, independently of the will, into a peculiar form; very frequently a kind of grin is produced by their action.

9. The affection of the muscles in tetanus does not at first reach to the highest degree of contraction, but the muscles become more and more rigid as the affection proceeds.

When the disease is in its most violent stage, the flexor muscles of the head and trunk contract so powerfully, that they counterbalance the force of the extensors, and hold those parts in a straight, fixed, immovable position. The muscles of the lower extremities become rigid; and even the arms, which till now were little affected, also partake of the general spasm and stiffness, with the exception of the fingers, which often retain their moveableness to the last. The tongue likewise continues a long while endued the power of voluntary motion; but at length, the violent spasms do :ave it unaffected, and it is then liable to be forcibly propelled between :eth, where it is sometimes dreadfully lacerated.

. In the extreme period of the disorder, all the muscles ned for voluntary motion are affected.

ıongst others, those of the face; the forehead is also drawn up into fur- ; the eyes sometimes distorted, are generally fixed and motionless in sockets; the nose is drawn up; and the cheeks are retracted towards ırs; so that the features undergo an extraordinary change. Ultimately pasms becoming universal, a violent convulsion puts an end to the pa- s misery.

. Wherever the muscular contractions are situated, in cases :tanus, they are always accompanied with the most excru- ng pain.

e contractions sometimes last, without any manifest remission, to the ıf the disorder; but in almost all cases, their violence, and the suffer- excited by them, undergo periodical diminutions every minute or two. relaxation, however, is never such as to let the muscles, which expe- e it, yield to the action of their antagonists; and it is in nearly all followed, in ten or twelve minutes, by a renewal of the previous con- ions and suffering. The recurrence of these aggravated spasms fre- tly happens, without any evident cause; but, it is often determined by s which the patient makes to change his posture, speak, swallow, &c.

!. With respect to the state of the other parts of the body, of the mind, during tetanus, there is but little change con- ring the severity of the disorder.

the sanguineous system we find no particular alteration; when the nt is labouring under spasms and shaken by convulsions, we naturally ct to find a considerable acceleration of pulse, and we do find it; but in ntervals the pulse is regular enough, and of the common standard. ı regard to the secretions, De Haen has remarked the high colour of the :, but Mr. Abernethy says he has not found the urine of tetanic patients r high coloured or deficient in quantity. Patients generally perspire y when they are agitated by the convulsions; at other times nothing par- ır is observable, either in the secreting or sanguiferous system. The bowels are generally acted upon with great difficulty, and the motions bad. There is no particular agitation of mind, but there is undoubtedly great insensibility in the nervous system with respect to the operation of medicines.

13. *Causes*:—Tetanus may arise idiopathically, which is, originating from some internal cause; or it may be traumatic, that is, produced by a wound.

Tetanus occurs, in its idiopathic form, more frequently in hot climates than in those which are temperate; it is quite uncommon in the latter, though very frequent in the former.

14. Notwithstanding the doubts connected with the cause of tetanus, Mr. Abernethy observes, there is one thing which we know, and that is, that the disposition to the disease occurs long before the action of the disease takes place.

Hence he concludes, with cases of traumatic tetanus occurring when the wound is partially healed, that in the painful and bad state of the wound, the disturbed state of the nervous system produces disease of the digestive organs, which re-acts on the nervous organs; so that the disorders do, in fact, reciprocally aggravate one another, till at last, there is no longer any local irritation, the tetanic disorder proceeding entirely from the established irritation of the cerebral and visceral functions.

15. Mr. Abernethy, therefore, is of opinion that the disordered state of the digestive organs, established during the irritative state of the wound, is the cause of tetanus.

16. *Prognosis*:—The more rapidly the symptoms are developed, the greater the danger; and on the other hand, the more gradual the symptoms are, the greater chance is there of overcoming the disease.

It was observed by Hippocrates, that if the patient survived the fourth day of the disease, there was a much greater chance of his recovery. Dr. Parry states, that if the pulse do not rise above 100 or 110 by the fourth day, there is a tolerably fair chance of cure.

7. *Treatment:*—On the treatment of tetanus, very different nions have been ventured; but the points which I shall pose to consider, are, the propriety of amputation; the efficacy incisions, cautery, irritants, and of cold affusion, the use of ding, and internal remedies.

8. *Amputation:*—The removing a part, by amputation, h the view of relieving tetanic symptoms, is now pretty gene- y disapproved.

aron Larrey advocates amputation in chronic cases; but it is the opinion ir A. Cooper, Mr. Abernethy, Mr. Lawrence, and others, that the practice judicious, because there is not sufficient chance of arresting the progress e disease.

9. *Incisions:*—On the subject of making incisions, for the pose of separating the nerves of the wounded part from the sorium, Baron Larrey states, that if resorted to, they should done before inflammation has come on, for if this has made progress they would be useless and even dangerous.

hey should comprehend, as much as possible, all the nervous filaments membranous parts; but he condemns all incisions into joints, as increas- the symptoms of the complaint.

0. *Cautery:*—On the principle of destroying the parts which the seat of the local irritation, Larrey also frequently applied actual and potential cautery to the wound.

he application of cautery, says he, may be practised with advantage on first attack of the symptoms, the same precept being observed as in making incisions. Bleeding, if necessary, and the use of topical emollients and lynes, may follow these applications, though in general, they have little t.

1. *Irritants:*—Blisters as nearly as possible to the wound, their application, or that of the ointment of cantharides, to wound itself, have been recommended.

Almost all modern writers have observed, that tetanus is a at its commencement, and in its progress, with an interruptio cessation of suppuration in the wound. Hence, the indicatio this process again, by the use of irritants.

22. *Cold Affusion*:—The emersion of the patient water has been practised, and apparently, in a few ca benefit.

Dr. Wright, of Jamaica, went so far as to pronounce it a cure Dr. Currie, of Liverpool, tried the cold affusion, and it certainl he relates one case, indeed, in which every body conversant with of tetanus must be convinced that the patient would have died remedy. He was plunged into the water, and kept there till he exhausted: he was, however, got out alive; a perspiration s came on, the symptoms were mitigated, and eventually he did we

23. *Venesection*:—Mr. Lawrence advises blood-letti particularly in the early stage: Baron Larrey, Dr. Dick Mr. Guthrie also favour bleeding.

Patients, says Mr. Lawrence, have been bled largely, and in ce the appearance of the blood drawn has seemed to justify the blood is buffed and cupped; and this, in conjunction with the s pulse, in his opinion, proves that venesection might be consid auxiliary remedy, although, if employed alone, it is not capable plishing the purpose in view.

24. *Medicines*:—Concerning different medicines n been written, though very few, apparently, are worthy

25. The rigidity of the muscles, and the excessive su patients labouring under tetanus, have led to the fre opium and other antispasmodics.

Opium does not produce the same effect on a tetanic patient as i person if he be in health; so far, therefore, you may give it in l Mr. Abernethy recommends it in small doses, and at such inte keep up a permanent effect on the system. Dr. Babington has grains in eleven hours. An *ounce* of the tincture of opium has times in tetanus, in the course of four and twenty hours. Though opium sometimes cure idiopathic tetanus, it must not be considered, if em- d alone, as a powerful or certain means of relieving the traumatic ty; in combination with other means it may be useful. Musk, camphor, ether, in large doses, in fact, all kinds of remedies which have been sed to have any power over the nerves and muscles, have been em- d.

6. Another remedy, said to have frequently effected a cure tanus, is mercury; but it has now fallen into disrepute.

7. Bark, wine, brandy, and other stimuli have been used, icularly by Dr. Rush, under the idea of tetanus being essen- y connected with debility.

particularly advises the liberal use of wine and Peruvian bark; and tetanus arises from a wound, he directs the dilatation of it, and dressings oil of turpentine. Considerable success is said to have attended this tice, not only by Dr. Rush, but likewise by Dr. Hosack. Dr. Elliotson ars to have successfully treated two cases of traumatic tetanus, with the arbonate of iron, in large and frequent doses of from two to four hms every two hours.

8. If Mr. Abernethy's proposition could be established, the important conclusion would follow, that, by preventing the rdered state of the digestive organs, you will prevent the urrence of tetanus.

9. Finally, Mr. Lawrence is of opinion, that the three ob- s of treatment, on which we should place our reliance, are section, aperient medicines, and opium.

appears to me, observes this distinguished lecturer, that the most suc- ul treatment of tetanus has been from venesection, in the early stage, the symptoms of general fulness of the vascular system are removed; the employment of active aperient medicines, (in alternation with anti- odics), from time to time, so as to keep up a continued action on the ls, and prevent the recurrence of that state of costiveness in which the se is generally found to commence: and from the free use of opium, for urpose of mitigating the severity of the spasms.

URINARY CALCULI.

1. These are found in four different situations in the urinary organs; viz. in the kidney, ureter, bladder, and urethra.

The calculi, which are discovered in the prostate gland, are not, in general, of the same kind as those met with in the organs just named.

CALCULI IN THE KIDNEY.

1. When a calculus is situated in the kidney, there will be felt considerable pain in the loins, in the vicinity of this organ, and occasionally it will be so very acute, and the part so exquisitely tender, that the afflicted person cannot allow even the slightest pressure over the loins. The urine, bladder, and sometimes the stomach, also afford characteristic marks of their presence.

When a calculus is situated in the kidney, it is often accompanied by a numbness of the intestinal tube leading from the kidney to the navel. There will likewise be felt great pain in the act of stooping, with frequent inclination to make water. The urine is frequently of a dark colour, from being mixed with blood: when this appearance is present, coupled with excruciating pain round the loins, it will generally happen that the stone is then in the act of descending, and in a few days afterwards, you will probably find that it has entered the bladder. There is also frequent vomiting; and excessive irritability of the bladder.

2. Renal concretions vary considerably in their number, size, and shape.

Calculous concretions of large size very often exist in the kidneys, without their presence being indicated by any external circumstances, or attended

;mptoms sufficiently unequivocal to constitute a ground for sus- e importance of their cause. On the other hand, it is very usual calculi, of middling dimensions, to excite serious and alarming ts. The reason of this difference becomes obvious, when it is recol- ıat smallish concretions are readily carried with the urine into the ıd become fixed in the narrow portion of the tube. But very large :an be contained only in the upper part of this canal, where its are more yielding, and the space in them more copious.

In cases of calculi in the kidney, nature generally makes ıpts to discharge them through abscesses formed in the ; unless, indeed, they are small enough to descend through ureter.

alculi often cause an absorption of the kidney; and when both kidneys affected at the same period, or if they successively become destroyed, in her case, death must ensue.

4. *Treatment:*—But little can be accomplished by the medi- al man in these affections; when the stone, however, is com- posed of uric acid, the exhibition of potash or soda may be ttended with considerable advantage.

These medicines will not dissolve a stone when once formed, but I am in- lined to believe that they prevent the further deposition of uric acid, and most decidedly lessen the irritability of the urinary organs; and by covering he surface of the calculus, with a sort of mortar, it becomes much less nnoying to the patient and much less irritating to the part in which it is ontained.

5. If the calculus is too large to be passed into the bladder, ou will be able very readily to feel it by a probe, through the penings formed by ulceration for its escape; and, in order t revent the closure of the sinus, by granulation, you shoul ıtroduce a sponge tent.

With a view of facilitating the escape of the stone, you may dilate ne by means of a bistoury; for there will be no danger in doing it, as ulgent artery and vein are situated behind the calculus.

CALCULI IN THE URETER.

1. When the stone has descended from the kidn
ureter, there will be felt great pain at different parts
to the sympathy existing between those parts and th
the ureter.

At first there will be great pain at the spine of the ilium, at
superior spinous process, in the course of the psoas muscle,
surface of the abdomen; as it passes along the ureter, at the ti
the lumbar plexus, there will be experienced very great unea
groins, and in the course of the anterior crural nerve down the t
goes over the spermatic plexus, the cremaster will be spasm
tracted, and there will be felt severe pain in the testicle; the
likewise be particularly irritable and continually eject its cont
covered with cold sweats; and a death-like paleness of the cou

2. The pain experienced in this complaint, is n
but comes on at intervals; after continuing some
complete remission occurs; but after a lapse of te
minutes, it returns with as much severity as before.

The symptoms just mentioned, teach you, unequivocally,
exists in the ureter.

3. *Treatment:*—During the violent paroxysms c
the patient should be bled to syncope, with a view o
inflammation; opium and potash should be given
pain and lessen irritability; and the patient may be
warm bath.

When the patient is in the warm bath, you should set by hi
the abdomen in the course of the ureter; for the urine having c
the stone, and its vis à tergo being insufficient to push the cal
friction, properly directed, will prove of great service by its n
fluence on the accumulated fluid, and it will be found agreeal
tient rather than otherwise.

nature, and the attempts of relief, fail in passing the on, the disease then necessarily terminates in the de- of life.

STONE IN THE BLADDER.

Directly the calculus has passed from the ureter into the der, the symptoms change.

ere will be micturition; pain or a sense of irritation at the extremity of penis, greatly increased upon making water, to the evacuation of which re is frequently a sudden stop, followed by an almost insupportable sense bearing down; and at the ejection of the least drop, the pain amounts en to torture.

2. The diagnostic symptoms of stone in the bladder, are, pain towards the extremity of the penis, opposite to the frænum; ischarge of bloody urine; sudden arrest of the water during he flow of a full stream; and a frequent disposition to void he urine; and pain in doing it, particularly in the erect posiion.

The sudden arrest of the flow of urine, is in consequence of either a valve rmed in the urethra, or the stone resting against the neck of the bladder.

3. When a person under this complaint is voiding his urine, e is observed to place himself in a position in which every mus le may be as relaxed as possible; his knees are bent, his hea esting against some object for support, while he draws the pr uce forcibly over the glans penis.

The urine is not changed unless there is much irritation in the bladd t if the stone has been of long standing, and there is disease in the bl der, there will be clots of blood in the urine. Again, in the attemp urine, there is a disposition to void the fæces, as the rectum obeys th of the bladder.

4. In many cases the abdominal muscles are affect violent spasms.

First, persons are affected with violent spasms of these muscles; t disease of the mucous membrane of the bladder, and frequent st When the mucous membrane of the bladder is affected, the urin white; there will also be flakes of matter in it, and when this is the patiént is in a state that would be improper for an operation.

5. When boys are the subject of this disease, there is g a remarkable elongation of the prepuce.

This is singular, and not easily explained, unless it is produced b on it when the pain at the extremity of the penis comes on; for as in this part is an exceedingly distressing symptom, and pressure on deadens it, it (pressure) is made, and the prepuce thus becomes by it.

6. Calculi either pass from the ureter; or they are fo the bladder around some extraneous body, or around blood, in either case forming a nucleus for the stone.

7. The calculi will be composed of the triple phospha uric acid, according to the degree of irritation which kept up; if it has been considerable, the stone will co triple phosphate.

Some stones are composed of concentric lamellæ, whilst others a those which are, layer after layer is deposited and adheres, but th are composed of much firmer materials than the bond of adhes unites them.

8. Calculi in the bladder vary both in number and Their usual weight is from half an ounce to an ounc

enerally under, and there is usually only one at a time; but I o not imagine the patient is in greater danger in an operation, om a larger number of stones being in the bladder, or even so uch, as when there is only one large or moderate-sized one.

It is not the frequency of introducing the forceps for withdrawing calculi m the bladder that is dangerous, but it is the bruising, from pressure, which es rise to the destructive symptoms.

9. The magnitude of calculi in the bladder is generally in an verse ratio to their number.

When a great number of calculi are found in the bladder, the circumstance enerally attended with an enlargement of the prostate gland, directly ind which a saculus is formed. In cases of diseased prostate, the bladder seldom be completely emptied; and this particular stagnation of the ne in the sac, is supposed to facilitate the production of calculi.

10. The urinary salts in calculous patients, are not continually ecipitated in the same quantities: in some cases, indeed, the ocess appears to be even suspended for a considerable time.

ence, a stone, of middling size, already formed, may increase, but very wly; and it has actually happened, that a calculus, which could be plainly t with a sound, has remained more than ten years in the bladder, and, yet, er all this time, been only of a moderate size.

11. The pain which a patient experiences from stone in the adder is by no means in proportion to its bulk. It is not actly in the inverse ratio to its magnitude, but still it ap- oaches that inverse ratio.

When a stone becomes excessively large, the patient generally loses the wer of retaining his urine, and the distillation of urine from the bladder events that contraction of it which occasions so much pain to the patient discharging the last drops of it.

12. Again; the pain does not so much depend on the form of

the stone as on the general irritability of the patient, and especially on the irritability of the bladder.

Thus you will sometimes in performing the operation, find a stone excessively pointed, where the patient has complained of but trifling symptoms; and, on the other hand, when the stone is perfectly smooth, the patient suffers extreme pain: however, rough stones are more likely to give the greatest degree of pain.

13. *Variety:*—There are four different kinds of calculi, when chemically examined. The first is the uric acid, which is common, but not the most common form of calculus. The second is the triple-phosphate, or ammoniaco-magnesian phosphate. The third species is the mulberry, or oxalate of lime: and the fourth, the cystic.

Uric Acid Calculus:—Is distinguished by concentric lamellæ, and when cut, has the colour and appearance of wood. It is soluble in alkalies, and alkaline remedies are commonly recommended for this kind of stone.

Ammoniaco-magnesian Calculus:—Is of a greyish white colour, and not so distinctly laminated as the uric acid. It is not soluble in alkalies, but it is acted upon by the acids, but not in any considerable degree. A quantity of matter resembling mortar, which is in fact, ammoniaco-magnesian phosphate, is generally passed from the bladder, and the urine is highly offensive.

Mulberry Calculus:—Consists of oxalate of lime, and is, to a certain degree, soluble in acids. It will be proper, therefore, to give, in these cases, muriatic or sulphuric acid; the muriatic is generally preferable.

Cystic Oxide Calculus:—Has the appearance of brown sugar in a state of crystallization: it is not composed of concentric lamellæ.

14. *Treatment:*—Although some little benefit may be derived from the use of alkaline remedies, by lessening the irritability of the bladder and constitution, the stone will still remain, and surgery will be the only effectual means by which the sufferings of the patient can be removed.

Soda, and the usual list of alkalies, may sometimes prove beneficial. The liquor potassæ conjoined with opium, has considerable effect in diminishing irritability, and it should be given for some time before the operation for

e. This medicine has a very beneficial effect in children who have stone
ie bladder, and pass a large quantity of matter; it will remove this ex-
ive secretion, and enable you afterwards to perform the operation with
ess.

LITHOTOMY.

5. In speaking of lithotomy, I shall commence by pointing
the symptoms of the actual presence of stone, then allude
he diagnosis and prognosis, point out what should be attended
before the operation, name the instruments required, explain
different ways of extracting calculi from the bladder; and
lly make a few cursory observations as connected with the
ject at question.

6. *Symptoms:*—The symptoms particularly indicating the
sence of stone in the bladder, are exceedingly equivocal.

here is a sort of itching along the penis, particularly at the extremity of
gland; frequent propensities to make water, and to go to stool; great
i in voiding the urine, and difficulty of retaining it, and often of keep-
the fæces from being discharged at the same time; the stream of urine is
le to stop suddenly, while flowing in a full current, although the bladder
ot empty, so that the fluid is expelled by fits, as it were; the pain is
atest towards the end of, and just after, the evacuation; there is a dull
i about the neck of the bladder, together with a sense of weight, or
sure, at the lower part of the pelvis: a large quantity of mucus is mixed
h the urine; and sometimes the latter is tinged with blood, especially
r exercise.

17. *Diagnosis:*—The symptoms of stone may be confounded
h several disorders connected with the urinary organs; there-
e you should not give a decided opinion founded alone on the
ications just mentioned.

he least fallible sign, says Sir James Earle, is the patient making the
portion of urine with ease, and complaining of great pain coming on

when the last drops are expelled. This is readily accounted bladder being at first defended from contact with the stone by t at last being pressed against it. Your maxim, however, shoul say there is a stone in the bladder, unless you can *distinctly* f sound or staff.

18. *Prognosis:*—Having ascertained by sounding existence of a calculus ; before you operate, you mus to draw your prognosis.

19. The first circumstance to be considered befo rate, is, whether the constitution of the patient is state, or his general health good; for there is no c which attention to these points is more necessary, performed, than that for stone.

The person should be in good health at the time, for unles will be little hopes of success. Those who have been exposed tudes of life and poverty, and have been obliged to labour fc generally bear the operation for stone well, and in those perso of success is generally greater than in the higher ranks of soci you usually meet with in private practice.

If the constitution be broken by dissipation, debauchery, or larities; if the patient's strength shall have been impaired want, or anxiety; or more especially if he be of a scrofulou shall have indulged in the abuse of spirituous liquors, your pr at all times to be extremely guarded, for the most part unfav in aggravated cases, utterly hopeless.

20. If the disease shall have been of long standing hausted the strength of the patient by suffering and w your opinion must be unfavourable.

21. If the bladder is ulcerated, do not perform t on any account, for it will not be successful. Bu never submit a patient to the operation for stone, if

fection of the chest, the least difficulty of breathing, any thma, or any irregularity of circulation.

patient is suffering exceedingly from the stone, you should not l he is free from every other complaint.

l age is no objection to the operation, for the best time d for it is about sixty-one or two; and at this period mber of cases occur. After this, the danger increases, en sixty and sixty-three, more cases recover than at period.

nt is loaded with fat, there is always danger of peritoneal in- Again, when there is an enlargement of the prostate gland, not operate.

ildren, before they are four years old, are in considera- from the operation. After four, they acquire strength, itability of the constitution is much lessened.

r years of age, convulsions frequently come on after the opera- three days the children often die, more especially if they have ood at the time of the operation.

et, &c.—The case being fully decided on, great advan- be derived from putting your patient on vegetable diet days before the operation; and giving the solution of h opium. He should also be *sounded* frequently.

duction of the sound, accustoms the bladder to irritation, and been done pretty often before the operation is performed, the s it infinitely better than when he has been operated on without.

e day before the operation, you should give your patient n, and the rectum should be completely emptied, other- l be in danger of being opened in the operation.

struments:—The instruments required in the operation are, a sound, a staff, a gorget, forceps, knife, and the *bistouri cachée;* not, however, that these are all necessary for every operation.

You likewise require a table about two feet six inches high, and bandages to fasten the hands to the feet, and to draw the knees toward the body.

27. The first instrument that it will be necessary to consider is the *sound:* this should be fitted to the size of the urethra, for if a small sound should be used in a large urethra, or vice versa, the stone will very often escape being felt.

You should sound the bladder, both when it is full and when empty. When a person comes to me with symptoms of stone, I order him to lie on a chair, and sound him; but if I cannot discover a stone, I then ask him how long it is since he has made water; and if he says an hour or two, I direct him to void his urine, and it has frequently happened that I have felt a stone as the water was discharging, when I had not been able to do it before. In these cases I use a catheter, putting my finger over the orifice, and moving the instrument across the bladder; if the stone is not to be felt, I take away my finger, and then, not unfrequently, as the urine escapes, the stone strikes against it.

If there is an enlargement of the prostate, the point of the sound frequently strikes against it, or passes over it, and in these cases the stone commonly escapes detection.

28. The next instrument required is the *staff*, and this should be as large as the urethra will admit, and a little more curved than the sound; let the groove be large and deep, which will lessen the danger of the knife or gorget slipping in its passage to the bladder.

In using the staff it should be held perpendicularly on the stone, (never on the prostate gland); then, when the gorget is introduced into the groove, it goes to the stone, and the forceps may be passed directly to the spot where it is.

29. The *gorget* which was first employed in the operation of *lithotomy*, had no cutting edge; but the gorget I am in the habit

f using has its cutting edge continued only *part* of the way back, n consequence of which, I know the exact size of the opening hat is made into the bladder, and it is an effectual safeguard gainst wounding the external pudendal artery.

In using the gorget, great attention should be observed to prevent its lipping between the bladder and rectum; it is a most horrible accident, and ost horrible in its consequence. This untoward circumstance, however, ay be easily avoided, if you will be always sufficiently guarded to cut with our knife into the groove of the staff; then put your index-finger-nail into he groove, and keep it there until you feel its situation occupied by the eak of the gorget; be sure not to withdraw your finger until you are atisfied of this fact.

30. The ordinary *lithotomy forceps* have their bend, or joint, wo-thirds of their way forward.

If the stone should break, you are then to use *flat forceps*. If it be a ft calculus, or a number of small ones, you may employ the *scoop* or *rotchet*.

31. The *knife* is perhaps the most simple instrument that can e used, but I do not approve of it, in all cases, so well as the *orget* or the *bistourie cachée*.

The result of my experience has convinced me that, in old persons, the nife is not so good an instrument, as either the gorget or the *bistourie achée*; but in young persons it may be used with perfect safety.

32. Another instrument for dividing the prostate and bladder, as of late been used with success, in the lateral operation of ithotomy; it is called the *bistourie cachée*.

This instrument consists of a knife, inclosed in a sheath, which, after eing introduced into the bladder, and turned with its edge downwards and utwards, cuts its way out when withdrawn.

33. *Lateral Operation*:—Having given you a general description of the instruments required in the lateral operation for

resting on the stone, begin by making an incision in the left side o
næum, commencing at the symphysis pubis, and carrying it *down*
outwards to midway between the anus and the tuberosity of th
the termination of the incision being opposite to the centre of the
cut will pass through the skin and fat, and expose the acceler
Divide this muscle between the bulb of the penis and left crus
with your fingers press the bulb under the right ramus of the i
prevent its being wounded; which being done, divide the trans
ronæi, and feel with the left index finger for the groove of the sta
the groove at the membranous part of the urethra, and bringing
handle of the staff, push the knife forward into the bladder, an
through the prostate gland, and the neck of the bladder *down*
outwards, corresponding to the external wound. Again pass
into the wound, and feel for the groove of the staff, then withdra
strument. Keep your finger in the bladder, and pass in the forcep
flat side next to it; having with the forceps carefully felt for, a
yourself of the situation of the calculus, grasp it within the bl
carefully withdraw it.

With the Gorget:—All the first part of the operation with th
the same as with the knife; the staff being introduced, and the o
the groove through the membranous part of the urethra having
pleted, you must fix the beak of the gorget in the groove, and b
handle of it towards you, at the same moment push the gorget int
der, with its point directed with a considerable inclination up
staff must now be withdrawn, and the forceps passed into the blad
the hollow of the gorget; then remove the latter instrument, and
stone as before.

ss the *sonde-à-dard* into the bladder, and by depressing the handle, avour to make its point project just above the symphysis pubis, in a line it and the linea alba ; force on the stillet, and in this situation it will e its appearance. An incision must then be made about two inches in th in the direction of the linea alba, through the integuments down to ladder, which is supported against the part by the point of the sound; then with a probe-pointed bistoury, make an opening into the bladder ast the edge of the wound, withdraw the *sonde-à-dard*, pass down the ps, and thus remove the stone.

5. The operation of lithotomy *through the rectum* is some-s recommended, because it is simple and can be easily done ; notwithstanding this, I can tell you it is a dangerous ration.

6. *Difficulties :*—There are many difficulties in the operation ithotomy.

7. A large calculus is a most serious obstacle to both the ormance and success of lithotomy ; it is a difficulty of a hor- nature ; and, in consequence of the bruise which the neck he bladder receives from the force necessary to be employed s removal, generally proves fatal.

ere is no comparison in the danger arising from a number of small s, compared with one large one : the small stones, if you are careful, ill be removed without doing any violence to the parts ; but with a large this is impossible.

8. Large stones, when connected with enlarged prostates, ent difficulties much greater than when the gland is in a lthy condition.

erations on such patients are dangerous to the last degree : for it is cely possible they can recover from them.

9. A deep perinæum is also a great obstacle, as the distance

of the bladder from the external parts throws great difficulty in the way of the operation.

The force which it is necessary to employ in such cases, is often so great as to lead to the destruction of life.

40. It not unfrequently happens that a cyst is formed in the bladder, in which the stone is partially or entirely contained.

If the cyst includes the stone entirely, the symptoms of stone cease. In general they are connected with an enlarged state of the prostate gland.

41. The bladder sometimes undergoes a partial contraction, and so firmly embraces the stone, that, when you introduce the forceps, there is no space between the bladder and the calculus, and the instrument constantly slips from the stone. In this way, the patient is often exhausted by the repeated attempts at extraction.

The contraction alluded to happens in this way:—Surgeons are generally anxious to allow the patient to retain a considerable quantity of urine in his bladder, in order that the sudden gush of water, on the introduction of the gorget, may inform them that the instrument has pierced the bladder. This practice, however, is wrong, as it is productive of the circumstance we have just related.

42. Soft stones require the use of the scoop. A number of calculi will require either the frequent introduction of the forceps, or the use of the scoop.

43. If, upon introducing the gorget, considerable hemorrhage should arise, this, after the stone has been extracted, may be checked, and entirely stopped by keeping the patient cool, and by plugging the wound with sponge or lint.

While there is any bleeding, it would be highly improper to place the person in a warm bed, as the increased temperature would necessarily augment the disposition to hemorrhage. Do not apply ligatures to the vessels on ac-ant of these bleedings, as they often, under such circumstances, give rise sloughings.

44. *After-Treatment:*—Having gone through the principal ficulties which are sometimes met with in the operation for one, we will now turn our attention to the after-treatment.

45. Formerly dressings were applied to the wound, and con-quently injections were thrown into the bladder, with a view removing every remaining fragment of stone; but in the pre-it day, the wound is left open, so that the urine may distil as ely as possible; and in this way any remaining portion of cal-ous matter is carried away.

he urine frequently passes in the right course in about twenty-four hours r the operation; sometimes, however, not till after three or four days; will depend, in a great measure, on the size of the stone. In general, patient has a rigor, when the urine returns to its natural course; you l not, therefore, be alarmed at this symptom.

6. Opium should be given to the patient as soon as the ope-on is over; indeed, in some cases, where the patient is ex-lingly irritable, I give opium two or three hours before the ration is performed.

lo this with two views, first, because the opium deadens the sensations of patient, and he suffers much less pain from the operation; and secondly, use it renders him much less irritable.

7. Diluents should be freely drank, and a small quantity of a or potash should be put in his diluted drink. Gum is also etimes added.

um is said to have the power of soothing the parts, and diminishing the ating quality of the urine.

8. The danger after the operation for stone, is that of peri-

toneal inflammation. Its first attack is to be treated by leeches fomentation, and, if necessary, bleeding and the warm bath.

On the day after the operation, therefore, you should put your hand on the lower part of the abdomen, and inquire whether there is any pain. If there is any tenderness of the peritonæum, you should apply leeches to the abdomen, and foment it. It will be often necessary to take away blood, to put the patient in a warm bath, if the symptoms are urgent. Vomiting is very frequent, when the abdomen is in a tense state.

49. The subsequent treatment will consist in giving considerable doses of calomel. Purgatives and anodyne injections should also be administered.

Calomel is a very useful medicine in this case, not only as a purgative, but because, combined with opium, it diminishes irritability, and lessens the disposition to inflammation in the abdomen.

50. The time in which a patient recovers is generally from seventeen to twenty-one days, under favourable circumstances.

LITHOTOMY IN THE FEMALE.

51. Calculi form as readily in the female as in the male; but the female is much less frequently the subject of the operation of lithotomy, in consequence of the shortness of the meatus urinarius, and the ease with which stones pass through it.

52. The symptoms of stone in the female are more urgent than those in the male; indeed it is horrible to witness the suffering a woman experiences in consequence of this disease.

She has a dreadful pain at the extremity of the meatus urinarius, and in addition to this, there is a forcing down of all the lower parts of the pelvis, as if they were about to protrude; a frequent disposition to make water, and all the pains suffered during delivery. There is generally a prolapsus uteri, a discharge of bloody urine. In addition to these symptoms, there is st constantly an incontinence of urine, a great urgency to discharge it, an incapacity to retain it. The constant excoriation of the parts from ause, keeps the patient in a most offensive state.

3. Stones may be removed from the female, either by dilat- the meatus urinarius, or by lithotomy.

e extraction by dilatation is, however, greatly to be preferred, not only use there is much less danger in it, but because it does not leave the nt without the power of retaining her urine, which the other operation .

4. *Dilatation:*—Some surgeons have extracted stones from female bladder in the following manner.

he patient having been placed in the position commonly adopted in the ral operation, a straight staff, with a blunt end, is introduced into the der through the meatus urinarius. The surgeon then passes along the ve of the instrument, the beak of a blunt gorget, which instrument being wider towards the handle, effects a part of the necessary dilatations. staff being withdrawn, and the handle of the gorget taken hold of with left hand, the right forefinger, with the nail turned downwards, is now oduced slowly along the concavity of the instrument. When the urethra neck of the bladder have been sufficiently dilated, the finger is withwn, and a small pair of forceps passed into the bladder.

5. This plan, however, has been objected to on account of dilatation being too suddenly effected; and the practice of gra- lly expanding the meatus urinarius with the sponge tent ferred.

he retention of urine, during the continuance of the sponge, certainly es great irritation; and, if the method be followed, a catheter should be ed in its centre, so as to admit of the free passage of the urine.

6. I am myself an advocate for the removal of calculi from female bladder, by dilating the meatus urinarius.

ow, for this purpose, I employ an instrument constructed upon the prin- le of the speculum ani and speculum oris, and which has the advantage

of permitting the urine to escape, whilst it dilates the passage s
for the entrance of the forceps, and the removal of a stone of co
size. I would also say, if the stone be small, the dilatation shou
complished in a few minutes; but that, if it be large, it will be
dilate but little, from day to day, until the greatest degree of ex
accomplished, carefully avoiding contusion, which is much to be d

57. *Operation:*—Notwithstanding these favourable
of the practice of dilatation, there are very good surge
deem an incision the best course.

It is certain, that some patients have found dilatation insufferabl
and painful; and although incontinence of urine is reported to be a
sequel, Sir Astley Cooper expressly states that his method of dil
meatus urinarius is not followed by this unhappy consequence.

58. The operation of lithotomy in females, is mu
easy of execution, and less dangerous, than in the male

It may be done in various ways; but surgeons of the present day
follow the mode of making the requisite opening by dividing th
and neck of the bladder. The operation is commonly done with a
director; and a knife that has a long, narrow, straight blade. T
staff, or director, is introduced through the meatus urinarius; t
is turned obliquely downwards and outwards, in a direction paral
ramus of the left os pubis; and the knife is thus conducted into th
and makes the necessary incision through the whole extent of th
and neck of the bladder.

When you find a stone in the urethra, it will be vain to attempt to extract t with forceps; even when it is felt very near the orifice of the urethra, or hen you can see it by opening the orifice, you can very rarely succeed in xtracting it with the forceps.

2. If the stone is lodged in the perinæum, and the patient is bouring under retention of urine from that cause, be very much n your guard not to displace it from its situation.

What you should do is to pass the largest-sized bougie into the passage, so to reach the anterior surface of the stone; you should then tie the bougie the penis, so that the urine may not escape by the side, and let it remain a considerable time in the urethra. The patient will have an urgent sire to make water, but you must desire him not to attempt to pass his urine til you give him permission to do so. When the urgency of making water so extreme, that the patient can no longer endure it, untie the bougie from e penis, and as soon as it is withdrawn, the urine accumulated behind e stone will gush forward, and the stone will generally pass into the sel also.

3. When the stone is lodged opposite the scrotum, there is nger of the urethra giving way, and the urine escaping into e cellular tissue. In this situation they sometimes prove fatal.

When you have ascertained by the probe, that the stone is in this situation, must endeavour to push it about an inch behind the scrotum, where you ould make your incision. It is wrong to make the incision through the otum itself, if you can avoid it; but if you are obliged to do so in conseence of your being unable to push back the stone, make the opening as ge as possible, so that the water may pass with great freedom through the llular tissue, and escape externally.

4. If the stone is lodged in the urethra, opposite the frænum, ifferent plan will be necessary.

have told you that you can very rarely succeed in extracting them with eps; what you must do is, to curve the end of a probe as much as pose, pass it down the urethra beyond the stone, and then withdrawing it, will generally succeed in extracting the stone. If there should be great stance, you may enlarge the urethra a little with the knife at the frænum.

those which pass from the bladder in consequence o and those which are found in the cyst formed in gland itself.

Stones in the prostate differ in composition from those in th consist of phosphate of lime.

2. Calculi in the prostate gland may be readily introducing your finger into the rectum; and may be extracted by an appropriate operation.

The case in which I was called upon to operate, I did not op but having introduced a staff into the bladder, I made an perinæum towards the prostate gland, and found but little tracting them, either with my finger or with the forceps.

CALCULI IN THE SUBMAXILLARY D

1. Stones are occasionally found in the duct of t lary gland, and produce irritation, the cause of whi ligible to the patient, and often not distinguished by

re is taken, may easily be executed without danger of wound- g any vessel.

You must place your finger under the jaw, and press against the gland : ssistant holds the cheek on one side, so as to bring it as far as possible the ear; you then perceive the duct under the tongue; you raise the ct and tongue, and feel for the stone, and having discovered it, you rate the cyst, and with a cataract knife cut on the stone, and then, with end of a hook, you pull it out. Lest you should wound some artery, and ve troublesome hemorrhage, be cautious to raise the duct as much as you sibly can.

DISEASES OF THE BREAST.

1. You find the breast subject to cancerous affections, others a different character; some that are not dangerous to life, ough they require an operation for their cure; others that are t dangerous, and do not require an operation; and you find it so subject to some diseases which, with an operation, or any her means you may try, generally terminate unsuccessfully.

When you see diseases of the breast, do not be in too great haste to put em under any classification, as it requires attentive observation to dis- guish one from the other, for if you do, you will frequently be liable error.

YDATID, OR ENCYSTED SWELLING OF THE BREAST.

1. The breast suffering under this complaint, is at first hard, nd afterwards passes into the fluid state. It consists of nume-

rous cysts containing water, as in hydatids or cysts that are found in any other part of the body.

2. There are but two species of this complaint; the one which contains a fluid-like serum, in cells; the other a globular hydatid, such as is found in the liver and other parts of the body.

3. *Diagnosis:*—The swelling is first hard; in the second place, fluid; thirdly, unattended with pain; and fourthly, there is no discolouration of the skin, or any particular constitutional irritation, excepting when ulceration commences, and then it is slight, and not at all alarming to the patient's mind.

The disease in its first stage resembles simple chronic inflammation; but, it may be distinguished from it by the absence of tenderness on pressure; and the perfect health, in which the patient remains, marks it as quite a local disease. In its second stage, when it fluctuates, its nature is indicated by the several distinct seats of the fluctuation; though the best criterion is afforded by puncturing the cyst, whereby a clear serum is let out, and not a purulent fluid. It is distinguished from scirrhus by its being free from the occasional acute darting pains, and great hardness of the latter affection, and by the health being undisturbed.

4. It occurs at almost any period after puberty, under twenty, and after fifty; but you will more frequently see it in the young than in advanced age.

I have seen more cases of this complaint between the ages of fifteen and twenty-five, than at other periods of life; but I have also met with it in older subjects, and one case, in an individual more than sixty.

5. *Causes:*—Of the causes of this complaint we know nothing, nor of the production of the cysts; these are points involved in obscurity.

On dissection, the following are the appearances of a true hydatid breast: —It contains a globular hydatid, the same as is met with in other parts of the body; this produces a cyst, which becomes the parent of others, and open it you see little ones growing from the internal membrane of -the internal lining of the first cyst is like an uterus to the others; from it in spots here and there, and at last become parricides, for y the parent.

is disease never requires removal on account of any lignant in its character, but it is generally done at the n of the patient, in consequence of its inconvenience. mes, however, will undergo an entire wasting.

has acquired any considerable magnitude, a slight inflammation ne part, and then this ulcerates, which allows of the discharge of luid. This being discharged, and the cyst empty, suppuration, ular adhesive inflammation, is set up, and the cyst becomes obliother undergoes the same process, and so on, one after another. ems to form, which leads from that in a state of suppuration to st, and thus it undergoes the same change as the one with which licates. In this way, after a lapse of time, the disease becomes

eatment:—When the disease has increased to such a t the patient is solicitous it should be removed, you may it is neither dangerous at the time nor in the future.

ting, if any diseased part should be left on the gland, there will be f the return of the disease, therefore, the best plan is to take away glandular structure of the breast.

though the removal of the breast is the plan usually I have employed a different treatment when there has gle cyst, with perfect success.

ease consists of a single cyst, I would recommend you to pierce ncet, the fluid will then escape. Do not close the opening until e process has commenced, and glued the cyst; in this way, the y be cured. The cure may also be effected by leaving the cyst anulation.

SCIRRHOUS TUMOUR, OR CANCER OF THE B

1. This is one of the two malignant diseases to w breast is subject, and is extremely frequent in its oc The symptoms of this horrible complaint may be con divided into the incipient, the inflammatory, and the su stages.

It is supposed by some, that the name of *cancer* was given to tl on account of the appearance of the surrounding veins. I sho say, it was from the appearances on dissection; for when you scirrhous tumour, you will see a number of roots proceeding to a able distance.

2. The first symptoms of a scirrhous breast, are, a l cumscribed, and moveable swelling; little or no p sometimes a discharge of blood from the nipple.

The tumour, however, is not always circumscribed, for it happens that inflammation extends, and the disease is lost ii rounding parts. The disease continues in the first stage for a lon weeks and months, gradually increasing, and at last the secc symptoms comes on.

3. In the second stage there is violent darting pain; a sensation in the part; the patient feels worse a little bef struation; enlargement of the tumour, and of the neig glands; a puckered appearance of the skin about the nip

In the progress of the complaint, a number of small black sp seen in the breast, and these increase as the breast enlarges. Infl on the skin and nipple comes on, and the cellular membrane parta character of the disease.

4. The third set of symptoms arise from suppurati on in the part. The constitution becomes severely

here is a difficulty of breathing, an inability to lie but on one side, pain in the right side, and also in the loins. The stomach is deranged, severe spasms at the scrobiculus cordis, and frequent vomitings come on; at last the patient is worn out from irritation, and expires.

Prior to an opening being formed, the skin becomes livid, and the breast is very painful in that part where it opens; and when the ulcerative state has begun, the glands above the clavicle enlarge, the arm swells just above the elbow, then it extends over the hand, fore arm, and upper arm. There is an interruption to the functions of the absorbent system; the blood is not returned by the veins; an increased secretion takes place from the termination of the arteries; fluid is thrown out into the cellular tissue, which, when evacuated, coagulates.

It is not true pus which is generally secreted, but after the adhesive process has been set up, there is an attempt at the formation of pus, which, if it forms, is not general, being only in some parts, and not in others: and it is more properly a sanious serum, as it has not the common character of pus.

5. Married women who bear no children, and single women, are more subject to this complaint than those who have large families.

It is very probable that the natural change which the breast undergoes in the secretion of milk, has some power in preventing this disease; but is no security against the complaint, though it lessens the tendency to it.

6. The progress of this complaint is in some persons extremely slow. In general, however, it destroys life in about four years from its commencement.

It is from two to three years growing, and from a year and a half to two years in destroying life, after it has arrived at its acmé. When suppuration and ulceration have commenced, and the constitution is disordered, it is even then some time before the patient is worn out.

7. *Cause:*—This disease is frequently the consequence of grief and anxiety; it is also attributed to an accident of some

shape or other to the part; but this is not the proximate cause of the complaint. The constitution itself must either partake of, or there must be a specific action in the part.

If there is a disposition in the constitution, to the production of this disease, in any part, some circumstances exciting a peculiar action in it must occur, and then scirrhous inflammation is produced. The disease is made up of a derangement in the constitution, and of a local peculiar action; it is the effect of a specific action in the part, preceded by a disposition in the constitution, to its production.

8. The scirrhous tubercle is said to be fibrous; but the fibres do not belong to it, they are nothing more than the cellular tissue thickened.

9. *Treatment*:—We have no medicines that can cure this disease; but if a patient applies to you with scirrhous tubercle, and her general health is in a disordered state, you may retard its progress by giving alterative medicines.

You should never operate unless the patient has undergone a course of medicine.

10. Another view with which medicine is to be given is this: if an operation has been performed, you should alter the state of the constitution by the exhibition of alterative medicines, (Plummer's pill, and compound decoction of sarsaparilla, or soda with rhubarb,) by which means you will improve the general health, and lessen the chance of the disease returning.

You may alter the constitution in this complaint, but it is impossible to disperse scirrhous tubercle when it has formed. Therefore, all we can do by medicine, is to change the state of the constitution prior to an operation, so as to prepare the patient for it; and when an operation has been formed, we can give alteratives so as to lessen the chance of its returning.

11. As to local treatment, we possess no specific local appli-

ion. They can do nothing more than retard, in some slight gree, the progress of the disease. The best application is the p cerate; or, if there is much pain I would use a drachm the extract of belladonna rubbed down with an ounce of the p cerate.

vaporating lotions, and warm applications should never be used, they do e harm than good; but the remedy just recommended, diminishes the rous irritability of the part, and excites a gentle perspiration without any ue heat.

2. If there is much inflammation, you can apply leeches, ugh the mode of treatment which I like, is, to give those licines which restore the constitution generally.

ou may restore the different secretions, by Plummer's pill, and diminish rritability of the nervous system by carbonate of ammonia. This is the plan, as far as I know, to keep the patient alive as long as the case will it.

3. With respect to diet, it must not be too low; but let r patient take those things which she finds agree with her feelings, and which do not derange the general health. Wine pirits must not be taken, or if wine is allowed, it should be ed with water.

ver hurry the constitution, nor give her anything so as to disorder the itution, but support the strength by animal food. Do not debilitate it on the one hand, nor stimulate it on the other; for if you do, it will be are way to hasten the progress of the disease.

Climate has been supposed to have an effect in preventing state of the constitution which favours the return of the se, but it has no such influence.

Operation:—The operation for the removal of a scirrhous st, should not be performed if the glands of the axilla gene- are enlarged, for it will be sure to return.

The operation is nothing more than a simple piece of dissection; it consists of making a semi-circular incision at the upper part of the breast, and over the tumour. In this step, you cut through the vessels which supply the scirrhus. When the mammary artery and its branches have been divided, you desire an assistant to compress the vessels by pressure, just above the incision, and you then go on excavating the parts and cellular tissue; the pectoral muscle is laid bare (and it is a good plan always to do this,) lastly, it is right to divide the integuments below the tumour, lest, as it sometimes happens, a gland is enlarged in the axilla; then it will be best to remove it, and the intervening part between it and the breast; for if you cut out the gland only, the disease returns, and it is always attended with unfavourable results. After the breast is removed, bring the edges together by one or two sutures; and when you observe a drawing in of the nipple, always secure that part.

16. Remember, that if in operating, you remove the tumour only, and not the roots before alluded to, there will be but little advantage derived : no glaudular structure, nor any of the roots, should be allowed to remain.

You must likewise, as we have already said, put your patient under an alterative course of medicine, both before and after the operation; else it will be of little use.

FUNGUS HÆMATODES.

1. This affection is one of the most dangerous maladies which can affect the human body, and although it has some resemblance to cancer, yet it differs from it in very many and essential particulars.

This disease has been described under various names, as the soft cancer, medullary sarcoma, bleeding fungus, and spongoid inflammation of Burns; but the name given it (fungus hæmatodes) by the late Mr. Hey, is that which is now generally employed.

Fungus hæmatodes begins with a soft enlargement of the which is extremely elastic, and in some cases very painful; increases, it often has the feel of an encysted tumour, and gth becomes irregular, bulging out here and there, and intes itself between the neighbouring parts.

Diagnosis:—The diagnostic symptoms of the disease, with d to the scirrhous tubercle, are numerous; and those atng the early stages, may be named under three sets.

t:—It attacks persons of all ages after puberty; whereas, cancer does ack the very young, as we rarely see it under the age of twenty-seven.
ndly:—This disease, in its early stages, by no means feels so hard as e scirrhus. When you press upon it with your finger, the spot readily es an indentation: but upon removing the finger, the hollow which it roduced, becomes instantly filled again.
rdly:—Likewise in the early stages of fungus hæmatodes, there is little r tenderness when pressed upon.

Thus, in the early stages, the want of hardness, want of rness, and want of pain, are the discriminating characteristics h should direct your judgment.

In addition to the diagnostic symptoms already given, there wo others which decidedly mark its difference from true nus: these are, the tumour is not so circumscribed, and the se may advance even to suppuration and ulceration, without lands of the axilla becoming at all affected.

tumour which constitutes fungus hæmatodes is not so clearly defined rrhous tubercle: it is difficult to say where the diseased structure teres, and where the healthy structure commences; the base of the tuis, therefore, diffused among the healthy cellular membrane, or other where it should happen to be situated.

Fungus hæmatodes attacks different parts of the body, especially the testicle, the eye, breast, and the extremities.

It is much quicker in its progress than true scirrhus; it grows much faster, the morbid action appears to be much more active, so that in six or eight months it will acquire a considerable degree of magnitude.

Thus in a few months, we find the disease of considerable bulk, having a livid surface, and a fluctuating feel, from a collection of fluid. The fluid contained in the cyst of fungus hæmatodes, is not of a malignant nature; it is sometimes perfectly transparent, but most frequently it is of a dark colour, resembling coffee, and composed of the red particles of the blood, serum, and bile.

7. As the diseased action goes on, inflammation is excited, and at length the cyst bursts; nature attempts to relieve, by exciting, in the cyst, the adhesive process; but failing in this attempt, (owing to a peculiarity of constitution,) a fungus sprouts forth, which rapidly increases, and there will be an enormous and disagreeable discharge.

This disease has a continued disposition to slough, from which circumstance it occasionally receives a cure, for instances have been known, where the entire tumour has sloughed, and the wound healed kindly, to the permanent relief of the patient.

8. The disposition of the constitution to produce this disease in one situation, naturally operates towards producing it in another, and thus it will be present in many parts at the same time, although its severity in one particular spot will be the immediate cause of death.

The dissection of those who die of fungus hæmatodes, shews that it generally exists in different parts of the body at the same period; and the cellular membrane, together with many of the glands, will be found studded with tubercles. The liver, the lungs, uterus, ovaria, testicle, eye, brain and medulla spinalis, &c. are all subject to the disease; but of all the parts of the body most frequently attacked, there are none so much so as tendinous structures.

9. *Cause:*—When many important parts are affected at the

time, it is evident that the cause must be constitutional; in it ever owes its origin to a peculiarity of constitution.

iough it may thus arise in almost every important organ at the same be thus generally diffused throughout the system, yet it appears that possess merely a *local* occupation, and the neighbouring structures tirely free from any morbid or diseased action; for upon removing d tumours, we find that the wounds thus produced, heal as kindly as her wounds caused by the extirpation of any other tumour.

Treatment:—This must be both medical and surgical, for ı do not attend to the general health, your other remedies ie useless.

h this view, you should allow a nutritious diet, pure air, and a reason- ortion of exercise: you should likewise prescribe in the way of medi- ither the hydrargyrum cum cretâ, or Plummer's pill, together with itter infusion and soda.

The radical cure of this complaint is to be effected in two ; the one by removing the fungoid part; and the other, by vouring to occasion its suppuration by means of pressure.

ither case, it is necessary, for the purpose of promoting a favourable f your surgical treatment, that you should attend to the state of the t's constitution, both before and after they are employed.

If you have recourse to an operation for the removal of art, you must make your incision *beyond* the discoloured lamed parts, for if you cut into the skin which has become ned, it will, of course, have taken its peculiar morbid ac- and the disease will unquestionably still continue to grow ıt situation.

Much has been said concerning the largeness of the vessels ıse tumours; but if these vessels are large, no danger ought apprehended from hemorrhage, as the bleeding can easily ›pped by pressure.

Blood-vessels situated in fungoid tumours, have no contractile pow sequently, when they are cut into, or divided, the bleeding from th continue for a considerable period, unless pressure is employed.

SIMPLE CHRONIC TUMOUR OF THE BREAS

1. This disease is not of a malignant character, an means dangerous to life; it is generally very young peop are attacked by it, and we seldom see it in persons abov years of age.

2. *Diagnosis*:—The age and healthy appearance of t son in which this state of breast is found, the lobulated the tumour, and its lying more blended with the neigh parts, at once characterize it from cancer; neither wil become cancerous, or dangerous to life.

3. The size of the tumour is generally from that of or walnut to that of a billiard-ball. They may grow lar may be attended with pain at the periods of menstruati never will prove of serious consequence.

If, however, the mind should be rendered wretched, in conse such a tumour, an incision will instantly enable you to remove it, an allay all mental irritation; but as far as the tumour itself is conce as regards the health or safety of the patient, the operation is by necessary, or when necessary, is by no means dangerous.

4. *Cause*:—I am induced to believe this affection sym with the functions of the uterus; as also, that a cause may be traced to the pressure produced by the wl *and steel* busks usually worn in stays.

5. *Treatment:*—Medical treatment will not have any influ- ce on these tumours; you may, however, for the purpose of rrecting the state of the constitution, should any thing amiss ist in it, place your patient under a course of medicine.

f the digestive functions be disordered, the compound calomel pill may taken at night, and the infusion of calumba with rhubarb, and the car- ıate of soda, twice a day. When the uterine secretion is defective, give ıll doses of the blue pill and colocynth with steel medicines. For local lications, I should recommend the emplastrum ammoniaci cum hydrar- o, and the iodine ointment. The disease, however, rarely yields till the rine excitement ceases, or the part is required to furnish its own natural retion.

ADIPOSE TUMOURS OF THE BREAST.

1. Tumours of this kind now and then occur in the breast, well as other parts of the body. They are not dangerous, hough sometimes of an enormous size; and may be removed the knife with safety.

IRRITABLE TUMOUR OF THE BREAST.

1. Like the simple chronic tumour, is very common, and ge- rally occurs between the age of fifteen and twenty-five. It is racterized entirely by its exceeding tenderness, and by the guineous temperament of the patient.

f you examine the tumour otherwise than with gentleness, she will expe- ce pain for hours, and even days afterwards, so exquisitely tender is this table swelling.

2. There is no necessity for alarm in these cases; the cause of the disease is easily ascertained; it merely arises from functional derangement in the uterine secretion.

Although the tumour is painful in common, yet the tenderness and pain immediately before the period of menstruation, are almost incredible: the pain extends from the breast to the arm on the affected side, and down to the fingers' ends, and has been known to affect the sight.

3. *Treatment:*—There is no visceral disorganization in these cases, and to afford relief, you have merely to adopt such measures as are calculated to restore the proper quantity and condition of the uterine secretion. As the uterine discharge increases, the irritation in the breast lessens, and will soon completely disappear.

To accomplish this, the best medicine you can give, is an ounce and a half of the mistura ferri composita, two or three times a day; or from two to five grains of the ferrum ammoniatum, as often. Leeches I would not advise; neither an operation for removing the tumour. Rather attempt to cure the disease by the plan I have just prescribed.

CARCINOMA OF THE MALE NIPPLE.

1. The nipple of men is sometimes affected with cancerous ulceration, similar to the breasts of women: it begins in the same way, in the form of the scirrhous tubercle; here, however, it is generally in the immediate neighbourhood of the nipple.

An incrustation forms on the surface of the nipple; this drops off, another succeeds it, and another to that again, until an ulcer is produced, and ultimately the whole nipple is destroyed: then the glands in the axilla, and likewise those above the clavicle, become diseased; and men die from this complaint precisely in the same manner as women do from cancerous *breasts.*

2. The chance of success from an operation depends upon its ing performed before the axillary glands become diseased; if ey are, you must not employ the knife.

The same medicine, and the same manner of treatment, as is recommended r cancer of the breast in women, must likewise be resorted to in these ses.

AREOLA TUMOUR.

1. Tumours occasionally exist round the areola of children. pon examining the breast, you will find a swelling as large as alf-a-crown, just round the areola; flattened towards the outer dge, but convex in the centre, that is, the nipple, which the welling closely surrounds.

They generally occur from seven to twelve years of age; boys as well as irls are subject to the disease; but I never saw either afflicted with it after he age of puberty, nor anterior to the age of seven.

2. Your treatment must consist in the application of the emplastrum ammoniaci cum hydrargyro; and at the same time you are using the plaster, you should give to the patient the eighth of a grain of the oxy-muriate of mercury in one drachm of the tincture of bark, twice a day; or, if the bowels should be disordered, you may give one drachm of the tincture of rhubarb, as a substitute for the tincture of bark.

The plaster that is used should have a hole in its centre, for the reception of the nipple; about every seven days it should be renewed. This plan, constantly followed, will subdue the disease in about six months.

LACTEAL TUMOUR.

1. Women, shortly after their confinement, are frequently annoyed by these tumours. They are very large, and upon examining them with your hand, you will readily perceive a sense of fluctuation: there is no pain, or any signs of inflammation, and the contents of the tumour is purely milk.

Your treatment should be to open the sac with a lancet; and after the milk has been evacuated, you should introduce into the opening, a sponge or cotton tent, this, in a short time, will excite inflammation in the sides of the sac; adhesive matter will be thrown out, which, glueing the parietes of the sac to each other, will be the means of gradually obliterating the cavity, and thus produce a permanent cure.

2. We have now considered the subject of diseases of the breast; we will next pass on to speak of retention of urine.

RETENTION OF URINE.

1. Retention of urine is, an inability, whether partial or total, of expelling by the natural efforts, the urine contained in the bladder.

The characteristic symptoms of this complaint, previous to the introduction of the catheter, is a distention of the bladder, to be perceived by an examination of the hypogastrium, after the patient has discharged all the urine, which he is capable of expelling.

2. *Causes:*—The most frequent causes of retention of urine are, strictures in the urethra, and enlargement of the prostate gland, in the male; and retroversion of the uterus in the female.

re are several other causes which give rise to this complaint; an accu- ion of blood in the bladder, stones in the urethra, or pressure of matter en the prostate gland and rectum, will sometimes occasion a necessity ening the bladder.

Treatment:—Every case of retention of urine demands ipt assistance; but, when the disorder presents itself in its lete form, the mischief of delay is of the most serious re.

he bladder is allowed to remain preternaturally distended, it not only its contractile power, but is quickly attacked with inflammation and hing. At length, some point of it bursts, and the urine is extravasated cellular membrane of the pelvis; spreading behind the peritoneum up as the loins, and, in other directions, into the perineum, scrotum, he integuments of the penis, and upper part of the thighs. The in- ation thus excited is extended to the peritoneum and bowels, and the nt expires.

In all cases of retention of urine, your first indication is rocure a discharge of the fluid through the natural passage.

is is to be answered, sometimes by means of fomentations, the warm bleeding, opium, and other medicines; sometimes by the removal of anical obstacles to the flow of the urine; but more frequently by the f the catheter, than any other means.

When all the plans you have used prove ineffectual; then comes necessary to puncture the bladder.

Before I speak more particularly of the means which geons recommend for relieving retention of urine by the e, you should first well understand the introduction of the eter.

person should ever dream of performing any operation by puncturing ladder, or in any other way, without first endeavouring to relieve the ent by the introduction of the catheter.

7. In passing the catheter, in common cases, you to bear in mind two motions which are necessary to e purpose. But in cases of enlargement of the prosta there will be some difference in the mode of passin strument.

First:—When you are called upon to introduce the catheter, self on the right side of the patient, pass it down under the arch o perpendicularly, until you reach the membranous part of the u then do not continue to pass the instrument in that direction, fo you will push it towards the rectum instead of entering the b having reached the membranous part of the urethra, you have o your hand a peculiar turn, and it will immediately pass the bladd

Second:—When the prostate is enlarged, the urethra is push so as to be doubled on the point of the instrument. You must, pass the catheter down to the apex of the prostate gland, the instrument towards the abdomen, so as to push the urethra as n can towards the perinæum, and then having brought the ure straight line again, depress the point of the instrument, and you abled to pass it into the bladder.

8. The operation of puncturing the bladder may b in three different ways: above the pubes; through th and through the perinæum.

9. *Operation above the Pubes:*—The operation turing the bladder, above the pubes, is very simpl founded in the following anatomical circumstances: in ral formation of the parts, the peritoneum falls from side of the rectus, over the upper part of the bladder, flected backwards to the fundus, leaving a *space*, fi cellular tissue, between the pubes and the reflected peri

This is the space in which the operation is performed, and all quired, is to make your incision through the integuments, to th an inch above the pubes. It is best to open the integuments in stance, because the trocar will afterwards enter the bladder with *and because*, if there should be any extravasation of urine by the trument, it will more readily escape. The incision should extend as far the linea alba. With respect to the direction in which the trocar is to be sed, you must not, on any account, direct the point downwards, towards anus, but *obliquely* from the penis to the back of the pelvis, just towards basis of the sacrum. The trocar and canula being introduced, the ter passes through the canula; and an elastic gum catheter should be roduced through the canula, and may be left in the bladder, for a great gth of time without producing any injurious consequences.

10. In the female, it is absolutely necessary this operation ould be performed in cases of retention of urine, from retro- rsio uteri, and from a cancerous disease affecting the meatus inarius. Operating through the vagina ought never to be rformed.

11. *Operation through the Rectum* :—This operation is per- rmed in the triangular space, formed by the meeting of the sa deferentia, constituting the apex; the sides, from the vasa ferentia, as they diverge in their passage backwards; and the sis of the triangle, by the peritoneum, as it is reflected from e posterior part of the bladder to the upper part of the rectum.

When you pass your finger into the rectum, you will feel the bladder pro- ting into it. It is elastic, and yields with difficulty to the pressure of the ger; you will readily feel the fluctuation. This leads you to the spot ere the trocar is to be introduced; the triangular space, above mentioned, directly presented to the point of the instrument. You introduce your ger about an inch, (never less than half an inch) behind the prostate nd, and then upon the upper part of the finger pass the trocar, which may either curved or straight, to the posterior part of the bladder. When the nt of the instrument rests upon the upper part of the rectum and the terior part of the bladder, you pass the trocar into the bladder *obliquely wards* and *forwards* by a slight and sudden motion of the hand. An stic gum catheter is then to be employed. On the whole, however, though easy operation, there are many objections, and I would not recommend it e performed.

2. *Operation through the Perinæum* :—This operation bears

a great similitude to that for stone. It consists in puncturing the bladder by the side of the prostate gland, and is unattended with any danger of wounding the peritoneum, because it does not reach the anterior part of the bladder.

You make an incision in the perinæum, as in operation for stone, cutting down on the bulb of the penis, and drawing it to the right side. You then carry the knife within the ramus of the ischium till it reaches the prostate gland, which you push to the patient's right side. You then carry the instrument *obliquely upwards* into the bladder, your finger resting on the prostate gland.

13. We have now gone through the three different operations for puncturing the bladder, and although there is no great difficulty in either, I affirm that we ought to avoid all these operations, and that puncturing the bladder for stricture in the urethra, or enlargement of the prostate gland, is in general perfectly unnecessary.

In cases of accumulation of urine in the bladder, for which many would have recourse to puncturing that organ, I have found opening the urethra only, a better and safer course. All I do is this, I desire the patient to draw up his legs as if he was going to be operated on for stone; I then make my incision into the urethra, according to the seat of the stricture, and the result is, that the urine is passed by the perinæum, and the bladder is relieved, without being in the slightest degree injured.

INCONTINENCE OF URINE.

1. This complaint is quite the reverse of retention of urine, for, as in the latter affection, the urine is continually flowing into the bladder, without the patient having the power to expel it; so, in incontinence, it flows out, without the patient being able to retain it.

cording to Desault, children are particularly liable to the disorder; s are less frequently afflicted with it, and persons of advanced years r to be still less liable to it.

Causes:—The causes of incontinence of urine, strictly lled, are the very reverse of those of a retention.

ontinence may arise from a relaxation or palsy of the sphincter vesicæ le, induced by debility, the abuse of spirituous liquors, excess in y, &c.; from injury produced by calculi; injury to the parts; and from ressure of the uterus in the state of pregnancy.

Treatment:—This must obviously depend on the circum- es which induce the complaint.

it arises from relaxation or paralysis, tonic medicines internally, and applications to the region of the bladder would be proper;—if the result itation, opiates and mucilaginous diluents;—or, if from laceration, are during pregnancy, and so forth, any reasonable plan of treatment, case may indicate.

DROPSY.

There are two species of dropsy of the abdomen:—the toneal or ascites, and the encysted or ovarian.

ASCITES, OR PERITONEAL DROPSY.

The peritoneal dropsy is an accumulation of water in the toneum.

e first symptom which a person feels who is affected with ascites, is pain e abdomen being pressed; every day this symptom becomes more and severe; the body goes on gradually enlarging, until, at length, the person applies for medical assistance. Upon examination, it will be found that the intestines are floating in a fluid, the abdomen enlarged, (in proportion, of course, to the quantity of fluid within,) and upon loosening the clothes, applying the hand to each side of the body, and gently using pressure with one hand, and slightly tapping the abdomen with the other, or giving the body a gentle sudden jerk, from side to side, fluctuation will be readily perceived. As the disease advances, dyspnœa comes on from pressure produced on the diaphragm, which at length becomes a very troublesome symptom.

3. *Diagnosis:*—The difficulty of breathing, and the increase of quickness on taking exercise, the inconvenience arising from the slightest pressure by the clothes, and the gradual enlargement of the abdomen, so strongly point out the character of the disease, it is hardly possible you can form an incorrect opinion respecting it.

4. The fluid secreted in ascites is serous, but does not contain so much albumen as serum in general.

The quantity of water usually drawn off, is from twenty-five to thirty pints; but, in this respect, the surgeon will occasionally find a variation.

5. *Causes:*—The most common cause is disease of the liver; it is also the result of local irritation, from enlargement of the abdominal viscera; it likewise proceeds from debility arising from fever, and from debilitating courses of mercury, the use of ardent spirits, &c.

Diseases of the liver, by impeding the circulation of the blood through that organ, by obstructing its free passage, must of necessity occasion a congestion of blood in the vessels of the mesentery, stomach, spleen, pancreas, and neighbouring parts; and, for the relief of this congestion, nature is under the necessity of effusing, from the filled vessels, the serum which we subsequently find in the peritoneum.

6. *Treatment:*—Medical treatment, when judiciously pursued, is very often successful in the cure of ascites; in the use

medicines, however, you must take care to direct their in- ence against *the cause* of ascites.

The medicines which experience has proved to be the most beneficial in psy of the abdomen, are calomel and squills; one grain of calomel and ee of squills in a pill; or, two grains of blue pill, combined with three ins of squills; one of these should be taken every night, or every other ht, and in the day you should give a mixture, composed of from seven to grains of carbonate of ammonia, one drachm of nitrous spirit of æther, nty drops of the tincture of fox-glove, and an ounce and a half of cam- r mixture. These medicines will often succeed in restoring a person to lth, whose constitution may be considered so broken and faulty that it y be deemed impossible for him to regain a sound state of body.

7. If the liver is the defective organ, you should endeavour restore its healthy functions, which, in general, is easily ac- mplished; but when the disease is occasioned by local irrita- n, arising, for example, from enlargement of the spleen, you ll then find great difficulty in performing a cure. If ascites ses from debility, independent of disorganization, it is readily ercome by medical treatment. When the disease has arisen m the irritation caused by ardent spirits, the medicines just commended must be relinquished, (or the complaint will not appear,) for more active remedies.

There are other medicines which are powerful in producing an absorption ffused water, and carrying it off by the kidnies and by stool. The most ive of these is *elaterium;* it is, indeed, so active, so severe in its effects, destructive, that you must never give it to persons of advanced years, nor those who labour under great debility. In dropsy, however, which occurs the middle of life, where there is strength to bear its operation, this medi- e will be found a most valuable remedy; but you must be cautious to com- nce with *small* doses.

8. When the attempts of medical treatment do not effect a re, an operation called paracentesis abdominis, is performed, which we shall hereafter speak.

ENCYSTED OR OVARIAN DROPSY.

9. The encysted or ovarian dropsy is a collection of water the membrane which covers the ovarium. It is entirely lo and a person may be attacked by it who is in perfect heal indeed the health of the female may be as good when she this disease, as a man's may be when he has hydrocele, and two diseases are somewhat similar.

After the encysted dropsy has existed for a short time, a small tumour be perceived just above Poupart's ligament, lying upon the brim of the pe in the hollow formed by the iliacus internus; no fluctuation can be perc in it at first; as it increases, it gradually rises as high as the kidney o affected side, it then crosses the abdomen, and fills the opposite side; it forms on one side, grows to a considerable size, then passes to the opp side, and thus becomes of very considerable magnitude. There is no in the progress of the complaint, and the principal inconvenience that from it when the tumour is situated in the pelvis, is its pressing upo bladder, and interrupting the free flow of urine.

10. The presence of fluid or fluctuation, is not so discove in this species of dropsy as in ascites; it is necessary to hav abdomen very much distended before it can be perceived.

There is about the same quantity of water drawn out in ovarian dro in ascites, and although the swelling may occupy both sides of the abd you will not find much variation in the quantity.

11. The fluid contained in the cyst of ovarian dropsy d considerably in different subjects; so that when you opera is quite uncertain what kind of fluid you will find. Some the cyst is filled with a number of hydatids.

In some cases it is serous, in others mucilaginous, and occasionally lent. The fluid is sometimes so thick when mucilaginous, that it w *escape through* a common-sized canula, and you are under the nece *introducing* one of larger diameter before you can succeed in drawing

12. The cysts in which the fluid of an ovarian dropsy is con- ined, are of two kinds; one is formed of the membrane which vers the ovary, and the other from an hydatid which lodges on that membrane; the ovary itself being quite unaffected.

3. *Treatment:*—I do not consider that medicines will pro- e any marked difference in the quantity of fluid contained he cyst of an ovarian dropsy, because there is a deficiency of orbents attached to that part.

ou may, if you think proper, give digitalis and mercury; they are strongly mmended; but I am fully satisfied, after you have tried them, you will e with me, that they do not possess the least power of decreasing the r of encysted dropsy.

hether medicines are taken or not with a view of promoting the absorp- of the water, I would advise you, at least, to attend to the fecal dis- ges.

1. When a person consults you, having ovarian dropsy, you ıld direct a belt to be applied tightly round the abdomen, for purpose of producing such a degree of pressure as will diminish tendency to enlargement.

a person leads a sedentary life, and does not employ pressure, you will find that the dropsy will so increase as to require an operation; whereas, e belt be worn, tapping may be put off almost to an indefinite period.

5. The operation of tapping has occasionally been performed a view of merely relieving the load under which the patient suffered, when, to the surprise of the surgeon, it has ended perfect cure; but, generally speaking, the vessels more monly have a disposition to renew the secretion of fluid, and disease again forms.

hen about to perform this operation, take care that you may not be d, and perform your operation on a person in a state of pregnancy; you d always, therefore, previously make yourself acquainted with the state of the parts, by an examination per vaginam. By neglecting this precaution, difficulties and accidents connected with the operation often arise.

16. A question has often been started by medical men, whether the operation should be performed early or late; and in reply, I say, never early; at this time, the cyst does not adhere to the peritonæum; consequently, instead of drawing the water off, it will escape into the cavity of the abdomen. Never operate, then, until the tumour has become *fixed*, and which fact you can ascertain, by carefully watching it in different positions of the body.

There is another reason why the operation should not be performed in the commencement of the disease, which is, the cyst at that period consists of different compartments, divided by septa; as the disease advances, and as the cyst becomes larger, these septa are broken down, and the whole of the interior forms one cavity.

17. It has been proposed, after evacuating the fluid from ovarian cysts, to inject them in the same manner as we do the tunica vaginalis for the radical cure of hydrocele.

The stimulant employed should be milk. It has been done, but not sufficiently to confirm its absolute utility; but for my own part, I think the subject is really deserving consideration.

18. Removing the cyst itself, in ovarian dropsy, has also been recommended, and this I really think may be accomplished when the cysts are *small*, but not when they are large.

19. We have now gone through the two species of dropsy of the abdomen, and our next subject shall be the operation for their cure, or palliative treatment.

PARACENTESIS ABDOMINIS.

). Whether you are going to perform the operation of ing for ascites or encysted dropsy, never do it until you can nctly ascertain a fluctuation, as you might otherwise endanger abdominal viscera.

l. The operation itself is very simple; and used to be per- ed between the umbilicus and the spinous process of the n, but this practice has been abandoned for a number of 's; and the opening is now made through the linea alba.

ie usual mode of performing the operation, is to place the patient in a chair, with a pail between his knees, the surgeon sitting in a lower r. A sheet is crossed round the abdomen, the ends of which are held by sistant, who presses the sheet tightly on the abdomen. The surgeon es a small incision with the lancet, and introduces the trocar through inea alba, about an inch below the umbilicus, into the part of the cyst ritoneum only, according as it is ascites or ovarian dropsy. The water ld be completely evacuated.

2. On removing the water in ascites, the patient is some- es seized with spasms in the diaphragm, towards the close its evacuation, as the diaphragm loses the support of the er.

man once died on this account, from laceration with the sharp-edged ıla; I therefore, now use a canula *rounded* at the edge.

3. Although the operation of tapping is performed, it will in general effect a cure. The water usually reaccumulates y shortly after; indeed, sometimes so rapidly, that some sons are said to have undergone the operation for encysted psy more than one hundred times.

It sometimes happens ovarian dropsy ceases to be re-prod
operation has been repeatedly performed. In general, howev
returns, and there are but few examples to the contrary.

PARACENTESIS THORACIS.

1. Hydrothorax is an accumulation of fluid in th
racterized by every symptom of oppression with re
respiratory functions; for the relief of which, an op
racentesis thoracis) is occasionally, though very
formed.

Patients usually sink after the operation; this is not surpr
hydrothorax is the result of the diseases of the thoracic visc
the heart or lungs, and the cause remains, though the effect is

2. Paracentesis thoracis, though unsuccessful for
is not always so when *matter* has accumulated in the

Matter is sometimes confined in the chest by adhesion, produ
empyema, and sometimes it is diffused through the whole cavit
on one side.

3. The marks of accumulation of pus in the che
siderable pain in the side, severe fever, and constitut
tion, cough, with difficulty of breathing, inability to
on the side on which the matter is accumulating,
considerable enlargement of the chest on that side.

The reason of this difference in the size of the chest, on th
is, that the accumulation of fluid prevents expiration on that
ribs are unable to descend.

4. When the presence of matter in the chest is

lished, the patient may be relieved by the operation now under onsideration.

Operation:—You draw the skin as much as possible *upwards*, and cut own with your scalpel on the upper edge of the eighth or ninth rib. Having ut through the intercostal muscles by this incision, without introducing the nife through the pleura, you pass the canula, through the pleura, and it nters the chest. The matter escapes as soon as you withdraw the trocar; fter which, draw the skin down, and the wound will close without danger f any further inflammation beyond the adhesive.

5. In the cases which have fallen under my treatment, I did ot draw off the whole of the matter at once, but discharged it radually, day by day.

I also found great advantage (in my last case) by fixing a girdle round the bdomen, which prevented the diaphragm from again descending by any ccumulation of matter.

6. With respect to *spurious empyema*, it is merely a common bscess, which must be opened, and treated in the ordinary way.

FISTULA IN ANO.

1. Fistula in ano is a sinuous ulcer in the neighbourhood of e anus and rectum; and is a disease in which you will be called pon to operate more frequently, perhaps, than in any other.

I do not consider it a disease which is very easy to treat; it very often les the skill of the best surgeons.

2. Fistula in ano is more painful than a common abscess; the tient has excruciating pain in the evacuation of his fæces, eadful *tenesmus, and very often* retention of urine, the pressure

of the matter preventing the passage of the urine tl urethra.

3. *Causes:*—The causes of this disease are ver such as constipation and relaxation of the bowels; (ease, as of the liver, or derangement of the aliment sedentary habits; and more especially diseases of the

It is necessary, therefore, to enquire whether the patient l cough, dyspnœa, and whether his constitution is impaired. I will avail without attention to the state of distant parts; you m sinus, but if the fistula depends on a disordered state of remo fistula will never heal without attention to the constitution of th

4. There is considerable variety in the size and co of fistulæ.

Sometimes the sinus is confined to one side of the gut; in oth rounding the gut; and in a third, entirely encircles the intest there is an opening on each side, it is best to perform the opera one side and then on the other. The fistula sometimes extends and burrows to a great distance behind the gluteal muscles.

5. Fistulæ are called *blind,* when the matter has way into the rectum, without making an opening e they are extremely difficult to treat.

6. *Treatment:*—The medical treatment of fistul will depend on their cause: if they arise from costiv aperients; if from disease of the liver, give saline calomel; if they arise from disease of the chest, as hy I scarcely know what medicine to recommend, thes almost always produce destruction of life.

It is of great importance to give such medicines as will bring th a healthy state. With this view the balsam of copaiba may b *great advantage*: if there is much irritation give soda, which h

cacy in diminishing the irritability of the rectum. Aromatic medicines should be given, especially the confectio piperis nigri of the London Pharmacopœia. This medicine in a very short time brings the fistula into a healing state; healthy granulations arise from the surface, and the discharge, instead of being serous or bloody, consists of good pus. Sub-muriate of mercury, with saline purges, should be occasionally given during the use of aromatics, with a view of promoting the secretion of the liver and intestines.

7. The principle of your surgical treatment consists in the division of the sphincter ani; if you do not divide the sphincter, you had better not attempt to treat the patient at all.

The operation of dividing the sphincter ani is simple in proportion as you ind a ready opening into the rectum. You introduce a small probe-pointed istoury into the fistula, pass your finger up the rectum to meet the instrument, and, carrying the point *downwards*, divide the intervening parts. If he fistula is very extensive, you will be under the necessity of putting your nger on the extremity of the instrument, drawing the knife downwards. If e fistula does not open into the rectum, you must pass the instrument up e sinus until it reaches the extremity; put your finger into the rectum to eet the knife, place it along the end of the knife, and move the rectum for me little time with your finger nail, and then, cutting through the cellular ssue, bring the point of the instrument into the rectum.

A very copious bleeding generally follows the division of the intestine; u must not, therefore, leave your patient, but endeavour to stop the morrhage by introducing a portion of lint into the wound. No union of e sphincter ani will take place until granulations have arisen at the parts f the wound most distant from the rectum. You should not change the lint r several days, but apply poultices, and merely introduce a probe from day day, to see that there is no improper adhesion. If you were to put fresh nt immediately, it would excite inflammation and produce fresh abscesses the surrounding cellular tissue. On the fourth or fifth day, you may insert small quantity of fresh lint: healthy granulations will arise in about a rtnight, under the treatment I have just mentioned: you may then apply t dipped in a solution of sulphate of copper.

8. A fistula in ano will hardly ever heal of itself, after the eration is performed, without the utmost attention on the part the surgeon.

he sphincter ani is the source of the difficulty in this complaint; every

time the patient has an evacuation, the contraction of the sphinct
separates one side of the abscess from the other, and thus the process
hesion and inosculation of the granulations is continually destroyed.

9. After the operation, the sore will often assume an ind
state, when you think it is upon the point of healing. I
tions are often successful.

10. Lastly, fistulæ are sometimes cured by the introdu
of a ligature, which gradually cuts through the part. A t
is passed through the sinus, brought out by the rectum, an
very tightly.

Many persons will not submit to the operation of being cut for fistu
prefer enduring much greater pain than any occasioned by the operati
such cases, the introduction of a ligature will sometimes prove succes

DISEASES OF THE TESTICLE.

1. The testicle, like other glandular bodies, is subjec
variety of diseases; some of which are malignant in their n
others not so. The affections of this part, which call fo
gical enquiries, are, the hydatid testicle, the scirrhous, th
goid, the enlarged, and the irritable testicle.

HYDATIDS OF THE TESTICLE.

2. Hydatids of the testicle is a disease of no very fr
occurrence, and it affects the young (between the age of
teen and thirty) rather than those who are advanced in ye

fined entirely to the testicle and epididymis; and at the first
rs much the appearance of hydrocele.

egins at the extremity of the epididymis, where it joins
le: there is an enlargement of the part which extends
the epididymis towards the vas deferens, and from the
s to the body of the testicle.

ase is never attended with pain, unless it acquires a very consi-
gnitude. The spermatic cord is a little varicose, but not hard;
tic veins are not larger than usual. There is very little inflam-
dency, and the patient can bear the parts to be roughly handled
in.

is disease is entirely local, and unattended either with
ional symptoms or danger; still, however, the opera-
istration is sometimes required on account of the size
the complaint arrives; the patient being unable to con-
lisease, is incapable of going into society, and will fre-
ntreat for the removal of the part.

on account of the pain that he suffers, or any apprehensions that
n need entertain, but on account of the inconvenience to which a
xposed, that the operation is usually performed.

m not aware of any instance in which, after the opera-
disease has returned, either in the spermatic cord, or
ier testicle.

SCIRRHUS OF THE TESTICLE.

ue scirrhus of the testicle is a very rare complaint; it
the body of the testicle, with an extremely hard swell-
ch may immediately inform the surgeon of the nature of

of various sizes form upon it. After the spermatic cord has becom
a hard tumour forms beneath the emulgent artery, which may be
the abdominal parietes. In true scirrhus, the testicle does not
larged to any considerable size. After the swelling in the loin
become enlarged, and œdematous on the side of the disease,
from the obstruction to absorption; and the pressure on the
also have some influence in producing this effect.

7. *Diagnosis:*—In hydatids of the testicle, the he
affected; but in the present disease, the countenance
a remarkable change; it is yellow, and sunk, a fixed c
minates abruptly in the cheek; the disease is also atte
excruciating pain, which becomes more intolerable as
plaint advances. It is generally from a year and a h
years before the disease destroys the patient.

When you cut into a swelling of this kind, you will find it co
considerable number of lobes; and cartilaginous substances,
matter, are frequently deposited in the testicle.

8. *Treatment:*—After employing the common re
the removal of scirrhus, (as recommended under can
breast,) without effect, the safety of the patient de

ually apply for relief. If the spermatic cord has not become enlarged, u may, by giving the patient alterative medicines for a length of time, ceed sometimes in preventing the return of the disease after the opera- n; it is, however, an operation which is, in general, even less successful an that for scirrhous tubercles of the breast. I have never performed it er the spermatic cord has become enlarged, because I know that the ease will be sure to return.

FUNGOID DISEASE OF THE TESTICLE.

10. This disease is much more common than the last; it be- ins, like true scirrhus, in the body of the testicle; but, unlike hat disease, it almost immediately affects the whole body of the sticle at its first commencement.

In a very short time, the epididymis becomes affected; next the spermatic ord; and, in the course of a very few weeks, a tumour forms in the loins. he disease is at first unattended with pain; but when the spermatic cord d the tumour in the loins become of great magnitude, the patient suffers nsiderably.

11. The fungoid swelling of the testicle sometimes increases o the weight of several pounds; and usually occurs between the ge of seventeen and thirty-five.

The appearance of the surface is somewhat livid; the spermatic cord is aded with blood, and in some parts you may feel a fluctuation, as if there as a cyst within it: it also becomes covered with tubercles of a consi- erable size.

12. The tumour has a soft pulpy feel, readily yielding to ressure; and on the first examination, you might suppose the isease to be hydrocele.

It may be distinguished from *hydrocele* in the following manner:—In the st place, it is flattened on the fore part, whereas in hydrocele it is pyri- rm; if you squeeze any part of the fungoid tumour, the patient will com- ain of the pain arising from the compression of the testicle, which he will

not do in hydrocele, unless you squeeze the posterior part of it: the fungoid tumour rather yields to the pressure of the finger, than fluctuates from one side to the other, as in hydrocele; and lastly, the great weight of the swelling when you lift up the sides, and the livid appearance of the scrotum, mark the malignant character of this disease.

13. The true fungoid disease is not confined to the testicle, but affects other parts of the body in a great variety of situations.

If you take blood from a person under this disease, you will find it so attenuated, that it will hardly coagulate; and if you have an opportunity of seeing the adhesive process, you will find the inflammation scarcely supporting blood-vessels; what few vessels are pushed through the part, assume the appearance of fungus.

14. The scirrhous and fungoid tumours are the only malignant diseases to which the testicle is subject. The operation of castration may be performed with a hope of success, if the patient be entirely free from other complaints, but, in a great majority of the cases which I have seen, the disease has returned.

There are, in general, tubercles of a fungoid character in other parts of the body, which destroy, notwithstanding all that can be done by alterative medicines, after the operation.

15. By the exhibition of alterative medicines, so as to improve the general health, you may probably prevent the disposition to the formation of the disease; but when the scirrhous and fungoid diseases are once engendered in the constitution, we know of no medicines to counteract them.

Knowing this, do not go over the same treatment, which experience has shown to be ineffectual, but try, amidst the great variety of new powers with which the discoveries of modern chemists have furnished you, whether there are not some more worthy of your attention.

SIMPLE CHRONIC ENLARGEMENT OF THE TESTICLE.

16. This complaint is merely a chronic enlargement, occurring in constitutions which have been injured by intemperance and over-excitement, as from the use of mercury, or the presence of a stricture; the tumour is hard, and although very often mistaken for scirrhous or the true fungoid testicle, it is extremely easy of cure.

This disease is of a similar nature to that which attacks the eye, which has been called iritis, and requires the same mode of treatment.

17. Unless medical treatment is adopted, the complaint will increase until the testicle is destroyed; but by a judicious application of your remedies, you may readily overcome it.

You must *strictly* enjoin him to keep the recumbent posture; apply leeches to the part occasionally, and evaporating lotions; and desire him to take three, or even five, grains of calomel with opium, every night and morning. If he does this, the enlargement of the testicle will subside in the course of a few weeks.

18. Do not on any account attempt to introduce a bougie, even though the state of the urethra should be the source of the enlargement.

The introduction of a bougie at first would only add to the irritability of the urethra: wait till you have altered the constitution by the means I have pointed out, and the swelling of the testicle is considerably reduced; and then, but not until then, you may resort to the use of the bougie with advantage.

19. Although the disease upon which we are now speaking, may be effectually cured by medicines, there is a chronic enlargement of the *testicle which requires* the operation of castration,

as large abscesses are sometimes produced by it, whic great pain, and the patient becomes anxious for its re

Fungoid granulations spring from the surfaces of these ab are not of the true malignant fungoid character, but they granulations which spring through the dura mater, in conseque to the brain. Even in this case, however, the granulations r from the surface, and the integuments brought together, so to render the removal of the testicle unnecessary. I have cured by sprinkling powdered sulphate of copper, or nitrat the part.

IRRITABLE TESTICLE.

20. The irritable testicle is a very formidable generally resists all means which may be employed The part is so extremely tender, that the patient ca walk, as pressure of the testicle gives him excruciati

The moment you touch the part, the patient shrinks from plains of dreadful pain, which will last for some hours. T up the spermatic cord to the loins, entering along the sperm the thigh.

21. The degree of suffering to which a patient from an irritable state of testicle, can scarcely b It is for the most part unmanageable by medical tre will, after a great length of time, sometimes wear its

It may be relieved for the moment, by giving the blue pil amus, but it generally returns, and will continue for months, a The patient lies on the sofa from morning till night, and is wh pursue any occupation. Sea-bathing may prove beneficial.

22. We have now gone through the different dis testicle, and we will next proceed to speak of th which we are occasionally called upon to perform, f cal cure of some of them.

CASTRATION.

1. This is one of the most simple operations in surgery; but efore it is undertaken, be cautious that the disease does actually quire to be removed, and particularly bear in mind the circumances which should regulate its removal.

The manner of operating is as follows:—The patient being laid on a table convenient height, you grasp the testicle in your left hand; begin your cision at the upper part of the abdominal ring, and extend it to the lower tremity of the testicle. Lay bare the spermatic cord completely at the dominal ring. The spermatic cord having been detached from its sur-anding connexions, with your finger and thumb, separate the blood-vessels m the vas deferens, pass a ligature between them, and having tied the mer only, cut through the whole cord, at a quarter or half an inch dis-ce from the said ligature, according as the state of the process and testicle ll admit. This done, you must then, with the same knife, with which you ve performed the former part of the operation, dissect the testicle out m its connexion with the scrotum; the loose texture of the connecting lular substance, the previous separation of the testicle from the spermatic rd, and the help of an assistant to hold up the lips of the wound, will able you to accomplish the operation with very little pain to the patient, d great facility to yourself.

2. The arteries which require securing, are, the spermatic tery, the artery of the vas deferens, and several in the scrotum. hese should be tied with fine silk ligatures.

The vessels which we have here named, are not, says J. L. Petit, the only rs, which may be the source of hemorrhage; for troublesome bleeding ill sometimes arise from the artery of the septum. If this should be the se, he recommends it to be suppressed by a ligature.

3. After the operation, Pott used to fill the cavity of the ound with lint; but Desault, and all the modern surgeons this country, bring the edges of the wound together, and deavour to heal as much of it as possible by the first intention.

With this view, some use sutures and sticking plaster; others, only th latter, aided with compresses and a T bandage. Sir Astley Cooper emplo two sutures; one opposite the end of the cord; the other at the mid-poi between the first suture and the termination of the incision. Mr. Lawrence plan of dressing consists in retaining the edges of the skin in apposition wi two or three sutures, and then applying a narrow strip of simple dressin A folded cloth, kept constantly damp, is also laid over the wound.

4. Sometimes, one or more vessels begin to bleed soon afte the patient is in bed, although they effused no blood just after th removal of the testicle.

Keeping the dressings and scrotum continually wet with the cold saturnin lotion, very often suffices for the prevention and suppression of hemorrhage if not, the wound must be opened again, and the vessels tied.

AMPUTATION.

1. Amputations are much less frequent than formerly. Man accidents, for example, where the parts are much lacerated, an for which our ancestors would have operated, we leave to nature by whose influence the different reparative processes will be se in action, and the injured limb restored to health and utility.

When amputation is necessary, nature will occasionally even perform th operation, unassisted by art, by the process of mortification.

2. The necessity for amputation has always existed, and eve will continue, as long as the destructive effects of injuries an diseases of the limbs cannot be obviated in any other manner.

In times past, amputations were clumsily performed, and extremely da gerous from the want of anatomical knowledge; but modern practitioner have materially simplified all the chief operations in surgery, and amputa tions are no longer so serious and horrible in their results.

3. Much improved, however, as amputation has been, it is an operation at once terrible to bear, dreadful to behold, and sometimes severe and fatal in the consequences which it itself produces.

Hence it is the surgeon's duty never to have recourse to so serious a proceeding, without a perfect and well-grounded conviction of its necessity. Amputation should be generally regarded as the last expedient; an expedient justifiable only when the part is either already gangrenous, or the seat of so much injury or disease, that the attempt to preserve it any longer would expose the patient's life to the greatest danger.

4. In order to make amputation truly appropriate, you must ascertain with precision, the cases which demand the operation; those in which it may be dispensed with; and the exact periods at which it should be practised.

5. *Diseased joints* used very frequently to lead to the performance of amputation, in young persons, as well as in the old; but in the present day, it is by no means so frequently resorted to.

It is a fact, highly important to be known, that, in these cases, amputation is attended with more success, when performed late, than when undertaken at an early period, before the disease has made great advances. This is particularly fortunate, as it affords time for giving a fair trial to such remedies as are best calculated to check the progress of the disorder, and obviate all necessity for the operation.

6. Even diseases of the joints of the upper extremities of children, give rise to amputation much less frequently than in the days of our forefathers.

7. With respect to diseases of the ankle and knee joints, amputation is still very commonly performed; and for such complaints, it is occasionally necessary both of the leg and thigh.

8. For *compound fractures* we rarely operate direc
are seldom so severe as to require it, and it is not until
or disease of the bone has taken place, that an amp
deemed necessary.

From the superior manner in which compound fractures are n
they do much better than formerly; and very severe injuries of t
tion will often terminate most favourably.

9. Extensively contused and lacerated wounds som
quire amputation of the limb; but wounds without fra
not often so bad as to need this operation.

When a limb, however, is extensively contused and lacerat
principal blood-vessels are injured, so that there is no hope of a c
of the circulation, the immediate removal of the member should
mended, whether the bone be injured or not. Also, since n
the part of the surgeon can preserve a limb so injured, and su
are more likely to mortify than any others, the sooner the o
undertaken the better.

10. When part of a limb has been torn off by a can
or any other cause capable of producing a similar effect
tion is immediately required.

The formation of a good and serviceable stump, the greater
healing the clean, regular wounds of amputation, and the bene
more expeditious, as well as of a sounder cure, are the princi
which here make the operation adviseable.

11. Mortification is another cause, which, when ad
a certain degree, renders amputation indispensably prop

Surgeons have entertained very opposite opinions concerning
when one should operate, in cases of mortification. Some pr
whenever the disorder presents itself, and especially whenever it i
of external violence, we should amputate immediately the morti
decidedly begun to form, and while the mischief is in a sprea
Others, on the other hand, believe that the operation should n
dertaken before the progress of the disorder has stopped, even
dead parts have begun to separate from the living ones.

12. Necrosis, exostoses, tumours, cancerous diseases, and so forth, may likewise be causes necessitating amputation.

Having said thus much on the cases requiring amputation, it will be as well to remark, that a practitioner should, at all times, consider the case well before he deprives his patient of a limb, and when the opinion of other professional men can be obtained, they ought always to be consulted.

13. In all cases before you amputate, it is necessary that you should stop the circulation of blood, by applying in such situations where it can be accomplished, the *Tourniquet*, an instrument which consists of a strong band, capable of completely surrounding the thigh, two brass bridges, a long screw, a pad, and two small rollers.

The tourniquet, in operations where it can be used, will be found of very great service; it will more effectually control the circulation than pressure by the hand.

14. The situation of the tourniquet must necessarily depend on the place where you intend amputating. In the upper extremity, if you operate below the elbow, let the tourniquet be applied on the middle of the arm; if above the elbow, not lower than one-third of the arm downwards.

If you amputate *above* the elbow, it should be fixed as near the axilla as possible; this will afford you room for dissecting back the integuments, and at the same time will allow of the retraction of the muscles. If you amputate *below* the elbow, the instrument should be applied about the middle of the arm on the inside of the biceps muscle.

15. When you amputate below the knee, you should fix the instrument on the middle of the thigh; and if you amputate above the knee, you must then fix it one-third of the way downwards.

In the first case, the pressure is immediately on the artery, at the inner side of the sartorious muscle; and the motive of the last situation is nearly the same as for amputation above the elbow.

tate at either the second or third joint of the finger
find that it is far better to remove the entire finger,
first joint, or even at the metacarpal bone behind th
as the stump necessarily left, is found very inconv
patient.

**Amputation of the finger at the second or third joint:—Ha
joint, you make a circular incision a little below it, throu
ments; this is the first step: you then make a cut through th
of the joint; you then turn up and back the flaps thus p
upon dividing the ligament with the scalpel at one side of the
mediately open it, carry the knife through, and divide the li
opposite side. In this way the finger may be removed; the
the bone, and a good stump be formed.**

17. *First Joint:*—This is also an operation whi
perform but to satisfy the wishes of our patient,
very unpleasant deformity of the hand.

**The finger is to be drawn aside; you then make an inc
through the web situated between them, and carry your cut j
knuckle; the knife is then to be carried through the joint fro
leaving a flap of integument sufficient to cover the end of the**

18. Although the amputation is usually done as

19. *Metacarpal Bone of the Thumb, &c.:*—The removal of he entire metacarpal bone of the thumb, is an operation somemes required, as also of the entire metacarpal bone of the ttle finger.

To accomplish the first, you make your incision by cutting through the teguments at the inside of the thumb, nearly opposite the first joint; you rry this incision backward to the union of the metacarpal bones with the rpal bones: this incision will form a flap, consisting of integuments and e abductor muscles, quite sufficient to cover the wound that will be occaned by the operation. After having completed this flap, the knife is then be passed backward from between the index finger and thumb as far as the pezium, to which bone the head of the metacarpal bone is articulated; en you arrive at this position, you are to turn the knife, so as to make its de form a right angle with the incision just made; you are then to carry edge through the joint, by which the ligament will be divided, and the ne is thus removed. The flap which is formed principally of the abductor llicis and the integuments, is quite sufficient to cover the wound.

20. The metacarpal bone of the little finger is removed by early a similar operation.

You begin your incision at the web, between it and the ring finger, carry it wn to the articulation with the unciforme bone, pass it through the joint, d then let it terminate upon the outside of the metacarpal bone, opposite e part where you commenced your first incision; a flap will be thus formed f muscles and integuments, in the same way as the flap in the thumb operan; straps of adhesive plaster are to be employed for the purpose of eping the edges of the wound together.

21. The vessels required to be secured in amputating fingers, re the two digital arteries.

OF THE TOES AND FOOT.

22. *Toes:*—The *operation for* the removal of the toes is so

carry your incision between the web for at least an inch and you will be opposite to the joint. The other steps of the ope same as for the removal of a finger.

23. *Foot:*—A new operation has of late years b for the amputation of the foot at the tarsus, by cu the joint, formed by the astragalus and os scaphoi os calcis with the os cuboides.

Having desired your assistant to draw up the integument incision from the bottom of the foot on one side, over the d the bottom on the other side, leaving the integuments of the undivided. Before you make your first incision, you, of cour correctly ascertain, the precise situation of the joint: after t has been completed, you are to bend the fore part of the foot which you stretch the ligament connecting the os calcis an You are now to place the blade of your knife horizontally, an bottom of the foot towards the toes, between the integume until you have cut a proper distance for obtaining a suff of integuments to form a flap for covering the end of the s then to be adjusted neatly over the wounds, and confined in t straps of adhesive plaster.

24. I have tried this operation, and do not like

OF THE LEG.

25. *Flap Amputation:*—The flap amputation of the leg is usually performed a little above the ankle joint, about two-thirds of the length downwards. It is performed with a view of enabling the person to wear an artificial leg; and in those individuals who do not require to obtain their food by labour, it may succeed and answer the object in view; but for those who, by their industry and muscular exertions, have to obtain their livelihood, it does not succeed.

Operation:—You push the catling through the integuments and muscles of the back of the leg, (about two-thirds of the length downwards,) and carry your incision downwards; when you consider the knife has passed sufficiently far, you are to make it cut its way out immediately at the back of the leg, and let the termination of the flap be of a semilunar shape; it will then correspond to the form of the wound, to which it will be afterwards applied, viz. the upper part of the stump. A circular incision is now to be made over the leg, so as to meet the incision where the catling first penetrated, and you remove the limb by sawing through the bones.

26. There are two other important objections to the flap amputation; the one arising from the difficulty of healing the stump, and the other from the great difficulty in securing the vessels if hemorrhage follow the separation of the ligatures; it is, therefore, an operation which it will be prudent in you to avoid performing.

It does not heal near so well as the common amputation, from the constant action of the muscles of the calf, which drawing the flap from the surface of the bone, exposes it, and the stump usually ulcerates most extensively. The difficulty of stopping the hemorrhage, of which we have spoken, arises from the vessels being so deeply imbedded in the soft parts.

27. *Leg Amputation below the Knee:*—In amputations below

regulated according to the size of the limb; and, in accide
parts have not been reduced by previous disease, four inches
not be too large a portion.

28. Your principal object should be to save integ
not muscle.

To preserve muscle for the purpose of covering the stump, i
tations, is an exceedingly false and injurious surgical principl
muscle as well as integuments, retraction will take place, a
consequently, will not heal near so kindly as it would have
you only preserved integuments.

29. The femoral artery being compressed by the
and the limb kept in a convenient position by an a
operation is thus performed.

Operation :—Take the handle of the knife between the fing
and divide the integuments; (they have two places of adhe
the tibia, and over the fibula ;) having separated these, and lik
necting cellular membrane, the skin is now loosened to the
inches, which quantity will be sufficient to cover the stump. I
I generally use but one knife, so that I divide the muscle, in
ment, and periosteum, with the same instrument. I, therefo
use, in amputating the leg or arm, the catling only. Take

straps of adhesive plaster are then to be applied over the integuments, some longitudinally, and others perpendicularly, for the purpose of making it circular. These longitudinal and perpendicular straps should be secured in their situation by a strap applied over them, and around the limb, so as to retain the first straps that were applied in their proper situation.

30. After the operation, the stump must be kept cool, and the dressings removed at a proper period.

The cooler the stump is kept, after the operation, the better; there will be less danger from hemorrhage, and less chance of the suppurative inflammation taking place; the adhesive is what we want, and this you will be most likely to obtain by keeping the stump in as cool a state as possible.

No rollers are applied to stumps by surgeons of the present day: no tow, no flannel caps, as there was formerly.

As to the time for removing the dressings; on the sixth day you may take away one strap, for the purpose of permitting any pus that may have collected to escape; and on the eighth day you may remove the whole of the straps, substituting for each, as soon as taken off, a fresh strap of the same kind of plaster.

OF THE THIGH.

31. In amputating above the knee, you must endeavour to make your incision through the muscles, in such a manner as to prevent the stump from becoming of a conical shape at a subsequent period. You should also let your incision be at least an inch and a half above the patella, on account of wounding the bursæ mucosæ situated just above that bone.

Operation:—After having made the incision through the integuments, and dissected them back, as far as may be thought necessary for the purpose of covering the stump, you are then to cut through the superficial set of muscles, and divide the deeper seated muscles situated immediately round the bone, at least two inches higher up than the spot at which you commenced your incision through the superficial set of muscles; this will prevent the formation of a conical stump. The superficial muscles will contract, but the deeper ones cannot, on account of their connection with the bone. The

tation below the knee, leaving a small aperture for the
should any form.

OF THE HAND.

32. Amputation of the hand, at the wrist join
quently required, in consequence of extensive la
metacarpus; but let me observe, that if any on
or the thumb remain, it is better not to amputa
a single finger is often exceedingly useful after
kind.

In performing the operation at the wrist, you are first of
styloid process of the radius; it is better to make a semi-ci
the back of the wrist, and a similar incision on the under s
the styloid process of the radius, instead of making at on
It is of importance that sufficient integuments should be
joint completely; then depress the hand a little, and cut t
verse ligament of the wrist. The radial and ulnar arte
vessels which in general require to be secured. The o
performed, and leaves a very neat stump.

t may be said that you cut through some tendons in amputating at the ist joint; this is true, but at the wrist joint they are so bound down by aments that they do not suppurate after the operation; and there is skin ugh to cover the extremity of the joint, which unites by the adhesive cess.

In amputating the fore-arm, you make your incision one-third of the way wn; make a double flap, one on the inside and the other on the outer side. sawing through the bones, take care to saw both at the same time. The lial, the ulnar, the anterior and posterior interosseal, are the four vessels ich require securing. A very good stump is left in this amputation.

34. *Upper-arm*:—Amputation of the upper-arm is similar to e operation of amputation above the knee.

In amputating above the elbow-joint, *two* circular incisions will be suffi-ent; one through the integuments, and a second through the muscles down the bone; having well freed the bone from muscle, you will proceed to ide it by the saw. The principle artery to be secured is the brachial.

SHOULDER JOINT.

35. Amputation at the axilla is a very simple, and, compara-rely speaking, a very safe operation. The joint heals as well d as quickly as after amputation at the middle of the arm.

The French, in performing this operation, make a flap before and behind the int; but in this country we do not. Thus:—Place the patient in a chair, slit the deltoid muscle, and introducing the knife, make a flap from the head the os humeri; it is better not to make the other incision through the teguments until you have dislocated the head of the bone from the socket. e next thing you have to do, is to cut into the joint, dividing the capsular ament, the head of the bone is easily dislocated from the socket. Carry e knife in a circular direction, and put your finger on the artery while you turning the head of the hone from the socket. There is no necessity for tourniquet in this operation; a finger may be put on the artery while are making the flap; but even this is unnecessary, for all that is required to divide the artery last, and put your finger upon it at the moment of viding it. This is the only artery to be secured.

36. The readiness with which the wound will heal after the operation, will depend upon the integuments being sufficient to cover the whole of the cartilaginous surface, and upon the constitution of the patient. If the constitution is not good, there will be danger of suppurative inflammation.

I have never known a patient die from the operation, but I have heard of cases in which the patient has sunk from hemorrhage, caused by sloughing of the artery some days after amputation.

HIP JOINT.

37. Amputation at the hip joint, has been so often performed with success, that it may now be considered as one of the established operations of surgery; but, for my own part, I do not consider it should be done when you can saw through the trochanter major.

When the acetabulum is laid open, great constitutional irritation is produced by the suppurative process; abscess after abscess arises, and the life of the patient is put into imminent danger; whereas the amputation through the trochanter major is attended with very little risk.

38. As this amputation is not of frequent occurrence, I shall not detail the steps of the operation, but here close the different amputations, and proceed to speak of the treatment of stumps. —*Ed.*

TREATMENT OF STUMPS.

1. In amputating a limb, your first object is to preserve sufficient integuments to cover the ends of the bone.

hat which you preserve should be integuments, and not muscles, for uscular fibres are preserved with the integuments, they will contract, and action of the skin covering the stump will be the result.

When the limb has been removed, you should apply liga-es to the bleeding vessels; and let them be small and consist ine silk, for nothing is so bad in operations as coarse ligatures, epting, perhaps, in cases where ossification of the arteries has en place, when they would be justifiable.

would not advise you to tie every small vessel; ligatures on the principal ries are quite sufficient; and the fewer applied the better; for though desirable to prevent the disturbance of the limb afterwards, yet, by ting a short time after the operation, the smaller arteries will generally bleeding.

There are two reasons why thin ligatures are best: first, ause they are less liable to escape; and secondly, they divide internal coats of the artery more effectually.

hen you use a very fine ligature, the internal coats will be completely ded, and the external one will remain entire. Thick ligatures pre-t the wound healing so quickly as thin ones. You are to cut off one ad of the ligature close to the vessel, and let the other hang out of wound.

When the limb is amputated, and the vessels secured, the nge should be applied, and all coagula of blood removed, as s is very essential to the union of the part; for if they are not en away, they will only act as extraneous bodies, and keep up itation.

fter amputation, having disposed your ligatures in a line with each er, and leaving them to hang out at the most depending part of the und, all that you have to do, is to apply your adhesive straps and er bandages, if necessary; if the weather be hot, to apply the spirit of e and water lotion; and if it be cool, to keep the limb quiet. The object o keep down the inflammation to the adhesive stage; if it goes beyond , suppuration will be the result.

5. The last circumstance necessary to mention, is the impropriety of dressing the stump too early.

In six or eight days after the operation, it will be proper to dress the stump, but to do it before, would be hurtful. All you ought to do is, in four days after the operation, to remove one strip of plaster for the purpose of letting out any matter which might have collected.

HÆMORRHOIS, OR PILES.

1. This is a complaint about the rectum, of a very common occurrence, and is, in the first instance, a distention of the hæmorrhoidal veins, forming small tumours either within the anus or at its verge.

There are three different states of the rectum under this disease:—first, as it is affected by external piles; secondly, by internal piles, accompanied by prolapsus ani; and thirdly, by excrescences.

2. Piles are either *external* or *internal;* that is, they are either situated in the rectum itself, or they emerge from the anus and become external.

In some cases they are attended with a discharge of blood, particularly when the patient goes to stool, called the *bleeding* or *open piles;* in others there is no discharge, when they are denominated the *blind piles.*

3. *External Piles:*—These are characterized by pain in passing the fæces, and tenesmus after the discharge. On examination of the anus, you discover a projection of a livid appearance, which, in two or three days, becomes so solid as not to yield to pressure.

In piles, the blood is coagulated in the hemorrhoid veins: after a time,

veins become affected, the patient feels an uneasiness in going to stool, l observes that his fæces are tinged with blood. In a short time, the ssure of the fæces, on the internal part of the rectum, brings down the ;, so that it becomes external. The intestine is brought down in this way, ry time the patient has a motion, and he is under the necessity of pressing the part for some time, in order to return the rectum into its original ıation.

4. This state of affairs continues for some time, till at length lammation comes on, which adds greatly to the patient's sufing, and he is often unable to return the rectum when it has scended.

Jnder this stage, the patient can neither walk, ride, nor sit; the only rable state being that of rest in the reclined position. Should he, during continuance of inflammation, be obliged to pass a motion, the distress is reme. With these symptoms, there is generally more or less feverish t and restlessness.

5. In general, when piles are situated far up the rectum, they less painful, than when low down, and sometimes the patient not conscious of having them till he begins to void blood from rectum.

ı the former case, Mr. Howship remarks, the veins or tumours are surıded by soft and yielding substances, which do not make any painful sure on them; but, when they are situated towards the anus, they often r painful constriction from the action of the sphincter muscle.

. With respect to the treatment of external piles, it must end upon whether the tumours have existed for a short time, a longer period.

you are consulted for external piles, and find a little livid projection at anus, which has existed only for a short time, and yields readily to sure, you should give some active aperient, avoiding carefully, however, purgative which has a particular influence on the rectum, as for example s. You should give castor oil, or sulphate of magnesia, with infusion of a, so as to produce a copious secretion from the intestines. In addition is, you may apply leeches to the part. The best local application is the liquor plumbi subacetatis dilutus. In this way, you will generally succeed in getting rid of the disease in this stage.

7. If the pile has continued till it has become solid, you will then pursue a different plan.

Put the point of your lancet into the pile, just puncturing the part and squeezing it between your fingers, you will press out a clot of coagulated blood. When the pile has become diminished, and the vein ceases to be swollen, the liquor plumbi subacetatis dilutus, with a purgative, will get rid of the disease.

8. If there should be considerable bleeding, a piece of lint, dipped in oil, should be applied to the pile.

9. *Internal Piles:*—Internal piles commence by a sense of weight and pain in the sacrum; you are seldom, consulted, however, until the disease shows itself by prolapsus ani.

Internal piles are accompanied with a higher degree of fever than the external; they are covered with adhesive matter surrounding the rectum, and the sphincter ani is affected with spasmodic symptoms.

10. In these cases you must endeavour to allay the irritation by local and general treatment; if the inflammation continue for a considerable time, you must give an aperient once in three or four days, but it must not be oftener repeated.

Free purging must not be done; apply leeches, fomentations, and poultices, to the parts, and take away blood from the arm. Sometimes internal piles undergo a natural cure.

11. If the means you have thus adopted do not answer your expectations, you must remove the piles by ligature; I say ligature, because experience tells me they are safer than excision by scissors.

The application of a ligature is exceedingly painful, if it be drawn tightly;

hould only be applied so as to interrupt the circulation, and destroy the of the part, without exciting much pain. Leave the ligature on the t; but if the pile be of considerable size, as the ligature is apt to slip, re especially if the peduncle be large, a straight needle, threaded with a ible ligature, should be passed through the centre of the pile, and tied on h side. This will excite little pain, and prevent the ligature from slipping

The time in which the ligatures come away, is from five to six days.

he recumbent posture must be enjoined, and the patient kept as quiet as sible, so that the circulation may not be hurried.

12. *Causes of Piles:*—They sometimes arise from costive-ss, and the pressure of the hardened fæces on the rectum; d are very often the consequence of long-continued diarrhœa; that, opposite causes occasionally produce the same result.

iles very often arise from disease of the liver, and congestion of the veins the intestinal canal. The difficulty of transmitting the blood through the a portæ, occasions a congestion in the hemorrhoidal veins; and obstructed retions in the intestinal canal lead to the same effect. Piles are also very mmon in persons subject to phthisis pulmonaris.

13. *Hæmorrhoidal Excrescences:*—When piles have existed r a considerable length of time, excrescences are produced in nsequence of inflammation. They are the remains of the piles, d possess a high degree of vascularity.

The mode in which these excrescences are produced is as follows:—The lammation of the pile, glues the sides of the veins together; adhesive tter is thrown out, which becomes organised, and a hard swelling, in which ere is a number of vessels, is produced. These excrescences project from e surface a little way up the anus, which is chafed and rendered extremely itable from this cause.

14. As these excrescences merely form portions of projecting in, although so exceedingly vascular and irritable, they may be moved by excision, without the least hazard.

POISONS.

1. Poisons are those substances, which, in small quantities, produce deleterious effects on the human body.

2. Poisons are derived from five sources: viz. those from the animal and vegetable kingdoms; the mineral and chemical; and another furnished by man himself, called morbid poisons.

3. There is a material difference in the action of poisons: some affect the vascular system, others the nervous; while many poisons both the nervous and vascular systems at the same time.

In looking at poisons from many animals, for example, we find the first action in the arterial system, while the influence of others evidently begins in the nerves. The poisons communicated by the viper and rattle-snake attack the arterial system first; that from the bite of a rabid animal, influences the nervous system first; but ultimately, in these cases, both become affected. Vegetable poisons act solely on the nerves.

4. Poisons diminish in effect by repetition; so that some, as opium, may be given until they lose their influence.

Vegetable poisons produce effects in proportion to the quantity taken, whereas, with morbid poisons, the quantity makes no difference in its particular specific action; but this is regulated by the peculiar condition of the patient.

5. The poisons which we shall have to notice, will be merely the animal and morbid. Vegetable and mineral poisons belong to treatises more professedly toxicological.

ANIMAL POISONS.

1. Under the head of animal poisons we shall have to speak hydrophobia, the bite of vipers, and the sting of the wasp and rnet.

HYDROPHOBIA.

This disease is the result of poison from rabid animals; is so different in its character, so opposed to those arising any of the other poisons, so marked in its nature, so horrid s effects, that, upon seeing it, you could not hesitate to form rrect opinion as to the nature of the malady.

e first symptom a person experiences who has been bitten by a rabid al, is pain in the injured part; and this is usually felt from the third to fifth week. The next symptom is a sense of chilliness, succeeded by s and heat; then a difficulty of swallowing is felt, not of liquids in icular, but of any substance;—this arises from the constriction of the les of the pharynx; and so violent are the spasms of the throat, that offering the patient any thing to swallow, you would think it would ctly occasion suffocation; he will desist from the attempt, and tell you ill try by and by; upon again applying the cup to his lips, he will be ed with the most horrid shuddering, turn away to avoid the sight of what as about to take, and sit down in a state of exhaustion.

In hydrophobia there is evidently a great excitement the nervous system, and it is quite erroneous to suppose t all the symptoms of the disease are produced by inflammation.

n the dissection of those who have died of hydrophobia, there has been

found inflammation of the internal surface of the pharynx; the mucous and muscular coats of the stomach similarly inflamed, and the muscular fibres of the latter, in a state of violent contraction:—the contents of the stomach not digested.

3. Although the appearances after death, confirm the previous existence of inflammation, yet they are not sufficient to account for the symptoms, and the cause certainly resides in the nervous system.

He who supposes that the disease depends upon inflammation, and treats it by bleeding, does not entertain correct views of the complaint; he is quite mistaken in its character.

4. *Causes:*—As to the hypothesis advanced respecting the infectious nature of hydrophobic virus, very little, of a satisfactory nature, can be said.

It has been advanced by some, and as strongly disputed by others, that the disease may be communicated by infection; that it is diffused through the blood, flesh, and secretions; consequently may be communicated by their use; that it may be communicated by the breath, and by other ordinary means of infection. Such opinions, however, are not to be credited; the disease can only be the consequence of absorption of virus through an abraded part.

5. *Prognosis:*—On the subject of prognosis, we can only bring forward one or two observations.

According to some writers, small wounds are not less dangerous than others, and an attempt is made to account for the fact, by the more copious hemorrhage of larger wounds, and the frequent neglect of lesser injuries. Perhaps, another reason is, that the virus is more likely to be confined in a wound with a small orifice, than in one which is ample and admits of being more effectually washed. The more numerous the wounds are, the greater is the risk.

6. *Treatment:*—The best mode that can be adopted, is, immediately after the part has been bitten, to cut it out: you should

first ascertain at what depth the teeth have entered, by means of a probe, and then take care to excise a sufficient quantity, and allow no part of the injured integument, cellular membrane, or muscle, to remain.

If persons should foolishly object to have the poisoned part cut away, I advise you, in such cases, to let sink into the wound, a small piece of the potassa fusa; this will readily dissolve, and, becoming liquid, its cauterizing influence will be communicated to each part of the wound, and thus destroy the influence of the poison.

7. As for medical remedies, when the symptoms of hydrophobia have once appeared, I am not acquainted with any. The only course I think calculated to do good, is that which has lately been adopted in France, viz. the injection of warm water into the veins.

To make the employment of the remedy safe, and to prevent pressure of the brain, the same quantity of blood as the water to be injected, should be previously abstracted. I may here remark, however, that the blood should not be taken away before the injection of the water, but may be let to flow from one vein while the water is thrown in at another, and this probably would be the better plan.

BITE OF THE VIPER.

1. The bite of a viper is quickly followed by severe effects, some of which are local, and the others general; but it is with the former that the disorder invariably commences.

At the instant of the bite, the bitten part is seized with an acute pain, which rapidly shoots over the whole limb, and even affects the viscera and internal organs. Soon afterwards the wounded part swells and reddens; sometimes the tumefaction is confined to the circumference of the injury; but most frequently, it spreads extensively, quickly affecting every part of the limb, and *even the trunk itself.*

2. *Treatment:*—The treatment of the bite of a viper be both local and general; for the influence of the virus nervous and arterial.

3. The local treatment has for its principal object, struction of the venom; the prevention of its entrance vessels, or the removal of it from the wound.

You have to sooth the local inflammation when it is severe, bathing and poultices, and anoint the part with sweet oil. If the cas it, I should advise you to cut out the part that has been bitten, an ligature above the wound, if the situation will admit of it, with preventing absorption. With respect to the general treatment, th medicines are cordials, ammonia and arsenic.

STING OF THE WASP AND HORNET.

1. The sting of the wasp and hornet gives rise, in ma to very great pain and severe inflammation.

The best application to mitigate the effects, is composed of one opium, rubbed down in an ounce of oil; put some of this on lint, over the wound, occasionally changing it; at the same time you sh the bowels open by aperients.

MORBID POISONS.

1. The action of morbid or specific poisons are vario acting on the arteries, some on the nerves, and others c cing in one particular part, and ultimately affecting th system.

The morbid poisons which you, as general practitioners, are called upon consider, are those of typhus, scarlatina, measles, small-pox, cow-pox, nereal disease, &c.; but of these we shall only enter on the virus of vene- al intercourse.

2. Whether morbid poisons be taken from the living or the ad, their influence appears to be the same.

VENEREAL DISEASES.

. There are two distinct poisons communicated by venereal ercourse; one, the poison of gonorrhœa; the other, the poison syphilis.

here is no comparison as to the difficulty of getting rid of syphilis and orrhœa: the former is very easily cured; but gonorrhœa is a disease which y often baffles the longest experience, and the greatest professional skill.

GONORRHŒA.

1. If gonorrhœal matter fall on a mucous membrane, there ll be a discharge of infectious matter, capable a re-producing same disease.

lthough the appearance of gonorrhœal matter is purulent, it has not lly the character of common pus. If you examine the discharge by the of a magnifying power, you will find that, though there may be globules pus, the greater part of the discharge is mucus.

2. When gonorrhœal matter is applied to the urethra, the

characteristic symptoms generally arise in three or four its application.

The patient first experiences a sense of titillation in the ure drop of urine were contained in it. This directs his attentio and he finds that the lips of the urethra are red, and that ther mucous discharge. Afterwards the urethra begins to be affecte siderable heat, and pain is experienced in voiding the urine, called *ardor urinæ*. The pain increases till it becomes, in ma cessively severe; there is an appearance of threads mixed wi which arises from the adhesive inflammation in the lacunæ of The next effect is a considerable diminution in the stream swollen state of the urethra contracting the size of the canal. often discharged in two, three, or more streams, in consequenc tracted and irregular state of the urethra.) At first the disch urethra is mucous, but after a little time it assumes a purulent The matter becomes yellow, and, if the inflammation is very green; and it is often intermixed with blood, so as to give it pearance.

3. The usual limit of the appearance of gonorr connexion, is from four to seven days; it is seldom and very rarely exceeds seven, days.

I have known it, however, occur within twenty-four hou nexion: and sometimes a fortnight, or a longer time, will el appears.

4. The time that gonorrhœal matter will contin charge, is quite indefinite. It is said that gonorrhœa itself out; but it is an assertion which is not to be r for it sometimes continues for so long a time, that e medicines have been employed, it remains an opprobri art.

In no case, ought you to rely on the efforts of nature for its general, you may very much expedite it by adopting a judicio treatment.

5. Besides the symptoms already enumerated

rnal effects on the urethra, gonorrhœa takes also an internal urse.

It does not confine itself to the beginning of the urethra, but extends along course of that canal, and often produces an erysipelatous inflammation of glands and frænum, occasioning effusion into the prepuce and phymosis. e absorbent vessels on the dorsum penis often become enlarged and hard, d produce little abscesses, which go on to suppuration.

6. The glands of the groin are generally sympathetically af- ted, and, in a first gonorrhœa, seldom fail to become enlarged d painful. They very rarely go on to the formation of matter, proper attention is paid on the part of the surgeon.

Where the glands of the groin are affected by gonorrhœal matter, several attacked at the same time; whereas, in the absorption of the poison of philis, a single gland only is enlarged on each side.

7. The other circumstances to be considered, with regard to e internal course of gonorrhœa, are, inflammation, stricture, ordee, abscesses in the lacunæ, &c. Of these we shall here- ter treat.

Inflammation, although commencing at the lips of the urethra, very ten extends along the course of that canal, so that there will be effusion rther than the original seat of the inflammation.

Irritation and inflammation also takes place in the corpora spongiosa, oducing that painful state of the parts, termed *chordee*, in which the penis els as if it were bound down, so as to prevent a complete extension. The nis is sometimes curved, and sometimes turned considerably to one side.

Another effect is, an inflammatory state of the muscles of the perinæum, companied with great irritation, and violent spasmodic contractions.

8. Whenever an old man gets a gonorrhœa, it is generally companied with an enlarged state of the prostate gland; the ladder becomes affected in consequence of gonorrhœal inflam- ation; it becomes highly irritable, and the patient experiences constant inclination to make water.

From what we have surmised in regard to the symptoms an
gonorrhœa, you can very well convince yourself that it produ
effects, not only in its external, but in its internal course.

9. ***Cause:***—The cause of gonorrhœa is undoubte
mation of the lacunæ of the urethra, and particula
lacuna magna, from the previous application of gonorr
ter to the lips of the urethra.

The inflammation is of the erysipelatous kind, but there is no
of ulceration. If ulcerations were produced, the membrane o
would soon give way. It merely gives rise to a specific secret
mouths of the vessels. Ulceration does occasionally take p
lacunæ, but not in the urethra itself.

10. The discharge of gonorrhœa is not unfrequentl
suspended by constitutional causes, but the symptoms w
as soon as the constitutional irritation ceases.

A man shall have an abundant discharge from the urethra, c
pain, and even chordee; and, if he should get a fever, the dis
appears, the pain ceases, and he will be entirely free from all s
the disease for a period of from seventeen to twenty days; as soo
as he begins to recover from his fever, the discharge of matter
sumed, the pain and chordee will return, and a long time may el
the disease will be removed.

11. *Treatment:*—You will generally find the cure
hœa difficult in proportion as the constitution of the
disposed to strumous affections.

If a patient has pimples on his face, enlargement of the gl
neck, a thin delicate skin and irritable fibre, you may expect to
difficulty in curing gonorrhœa.

12. The treatment of gonorrhœa is founded on tw
ples; the disease may be either treated simply, by di
inflammation; or it may be treated by producing a cha

on of the part, by which the disease is removed in a short iod.

ercury is wholly unnecessary in any form of this disease, and ought by neans to be used.

3. Your treatment must vary according as the case may be a t clap, or not; for it seldom happens it can be cured by the ie means which may be employed in subsequent attacks.

Then a patient applies to you for his first clap, there will be generally a it deal of inflammation, and I advise you always to purge actively with sulphate of magnesia and the infusion of senna. You may afterwards the submuriate of mercury, with extract of colocynth, but merely as a ;e; for if it were to act as a mercurial, I would not give it at all. re is no necessity for giving calomel, unless you wish it to act on the ;, as well as on the intestinal canal. Having purged the patient very ly, you will direct him to take plentifully diluent drinks.

4. The diluents usually recommended in this disease, are numerous; but some of them ought not to be used under aliar circumstances.

wo drachms of the carbonate of potash, or the subcarbonate of soda, ild be taken in a quart of some diluting drink, in the course of a day: llaire or tea, will answer the purpose very well; some advise the gum cia, but whether it does any good or not, I do not know. I have found liquor calcis a very excellent diluent in this disease. Soda-water is often ul, but it must be ascertained whether it produces irritability of the lder; for, in some persons, it increases instead of diminishing irrita- ty. If it increases very much the inclination to make water, it should be persisted in; if it does not produce this effect, it is an excellent ent.

5. Excess of inflammation in gonorrhœa, will require your ention and alleviation.

he penis should be suffered to hang for a considerable time in warm er, which will relieve the inflammation, and produce nearly all the good cts of a warm bath. When the ardor urinæ, and pain from chordee, ery severe, twenty drops of the liquor potassæ, with from three to five dies must somewhat differ.

After that time, you may apply lint with the liquor pl
dilutus (white wash,) to the part; and at the end of the ten
inflammation has in a great degree subsided, you may giv
copaibæ. An ounce of the balsam may be mixed with
mucilage of acacia, and four ounces of the camphor mixtu
spoonful given morning and evening. Having given this
days, the discharge will be very considerably diminished, a
order an injection, and still continue the use of the balsam.

17. Injections ought not to be used in the first
having waited for ten or twelve days, until the infl
in a measure subsided, and the extent of dischar
you may then employ them with benefit and safety.

The best injection you can use, is the liquor plumbi sub
simply at first, and afterwards united with about six grain
of zinc to four of the fluid.

If, instead of using an injection at the stated time, yo
charge to run on, week after week, you will be almost
foundation of stricture.

18. We have now gone through the different
treatment for a first attack of gonorrhœa; but if a

19. Various injections are employed in the treatment of goorrhœa: so that if the one you first use does not speedily put a top to the discharge, it is much better to vary your injection, han to persist in the use of the same, and thereby lay the founation of stricture.

Half a grain of the sulphate of copper, in an ounce of rose water, is a owerful injection; a solution of one grain of oxymuriate of mercury, in welve ounces of distilled water, makes a very irritating injection.

The use of irritating injections must necessarily be regulated by circumtances; if they produce much inflammation, you should suspend the use of hem; and if, on the other hand, they excite no pain at all, you may gradually increase their strength.

20. If these attempts of cure prove ineffectual, I would recommend you to begin immediately the use of bougies with injections.

The use of bougies will increase the discharge for a time; but, being combined afterwards with the use of an injection of the sulphate of zinc, will generally succeed in effecting a cure.

21. With respect to the number of times the patient should inject, three or four times a day will be quite sufficient.

As to the strength of the injection, it should be increased so as to produce a slight degree of irritation: but it is better to vary the injection, than to increase its strength in any great degree.

22. There are other means of curing gonorrhœa, by producing a change in the action of the urethra, as for instance, by the use of cubebs.

Cubeb appears to produce a specific inflammation of its own, on the urethra, which has the effect of superseding the gonorrhœal inflammation. It is a remedy of a most admirable and useful kind, and may be given with advantage even in the inflammatory stages of gonorrhœa, provided the inflammation does not run excessively high. In the early stages, when the inflammation is just beginning, it often succeeds in removing the disease in a very short space of time. Although cubebs are so serviceable alone, the

greatest advantage may be derived from combining its use with that of the balsam of copaiba when the latter is beginning to lose its effect.

23. If strict attention is paid to the rules I have laid down for your treatment of gonorrhœa, I think you will find it the most likely course to contribute to the maintenance of your own professional character, and to the welfare of your patient.

The subsequent surgical subjects which we shall now consider, are the *consequences of gonorrhœa.*

STRICTURES OF THE URETHRA.

1. There are three kinds of stricture of the urethra; the permanent, the spasmodic, and the inflammatory.

2. *Permanent Stricture:*—The permanent stricture is the result of a thickening of the urethra from chronic inflammation.

An individual having permanent stricture, first observes a few drops of water remain after the whole seems to have been discharged, then notices a fine spiral or divided stream, and, lastly, discharges his water by drops only. In this last state, for the purpose of facilitating the escape of the urine and preventing its being retained by the lacunæ of the urethra, he draws out the penis with considerable force.

3. In cases of stricture, you will find in all stages, that the appearances and nature of the urine will be according to the degree of inflammatory excitement.

When the inflammation has extended to the mucous membrane of the bladder, there will be a considerable quantity of mucus with the urine; the urine, when discharged, is as transparent as usual; but when it has cooled, the mucus sinks to the bottom, where it appears ropy, and adheres to the vessel. As the inflammation of the membrane increases, the urine becomes llow on cooling. When the disease is of a very aggravated nature, the ine will become quite white. If the urine is bloody, it is a proof that ulcerative process has commenced, and if not bloody, on the contrary.

4. In that state of stricture when the urine is loaded with pus, patient has frequent and severe rigors, or even below that te of inflammation.

he person will have frequent shivering fits, so that you would suppose had an intermittent fever, and would probably order him bark. In e cases, however, this medicine has no effect, and you will find opium remedy.

. Persons labouring under stricture, are sometimes severely cted with piles, and not unfrequently, direct inguinal hernia.

he last complaint is in consequence of the extreme force that is employed vacuate the urine.

Seat of Stricture:—There is no part of the urethra which ot liable to stricture, but most frequently it is found in three ations: first, just at the beginning of the bulb; secondly, at membranous part; and thirdly, in the prostate gland itself.

stricture does not always arise from an equal contraction of the urethra round; for, in some instances, the contraction is only on one side.

7. *Cause of Permanent Stricture:*—The cause of permanent icture of the urethra, is inflammation of the chronic kind, in ninety-nine cases out of every hundred, it is the result of lected gonorrhœa.

hronic inflammation occasions a greater determination of blood to the t, and produces a deposition of adhesive matter on the outer side of the thra; the urethra itself becomes thickened, which, together with being sed upon by the adhesive matter collected in the intersticial spaces surading the urethra, produces the stricture in question.

Treatment of Permanent Stricture:—There are three principal objects to be attended to: the first of which is, to cure the complaint by dilatation; the second, by absorption; and the third, to destroy it altogether.

The first is effected by mechanical means; the second, by the influence of medicines; and the third, by burning it away with caustic.

9. The first, or cure by dilatation, is accomplished by means of bougies; from the regular use of which, strictures may be readily cured, and the strictured part of the urethra made to regain its natural size.

Bougies are made of either wax, catgut, or silver; and they are usually numbered from 1 to 16, according to their dimension, so that the surgeon may, on each occasion, know the size he is using, and the size last used. Catheters are sometimes employed as a substitute for bougies, and answer the purpose tolerably well. Catgut bougies are only employed when the stricture is particularly small.

10. The wax bougie is the one in general use; but for a successful employment of this bougie, there are a few necessary points to bear in mind.

Never attempt to pass a bougie in its straight state, for, if you do, it will be obstructed in its passage, whether there be stricture or not; you should invariably give it, before its introduction, the curve of the catheter.

Now, with respect to wax bougies, before introducing them into the urethra, you should always warm them by the fire, for the purpose of rendering them soft; when, if they are introduced into the urethra, and pass through the stricture, you will ascertain the distance at which it is situated from the orifice, and the form and size of the stricture will be modelled on the bougie. On the following day, you again introduce two bougies, that is, if there be no existing inflammation to prevent it; the first bougie you then use, is to be of the same size as the one with which you concluded on the previous day; after this has been withdrawn, you again pass another, a size larger; thus using on every occasion two bougies, always beginning with one of the same size as that with which you had concluded on each preceding occasion.

11. Although this is the general practice, I do not altogether *so well* approve of the wax bougie.

I use is made of silver; it is of the form of the catheter, but
ınd running back for some distance towards the handle, it is
the way I use it is this;—I first pass down, in the manner
ibed, a wax bougie, for the purpose of ascertaining the size,
tance of the stricture. Having obtained a knowledge of these,
ıce my conical silver bougie, the point of which having entered
the further it passes, the greater is the dilatation produced, in
›f the form of the instrument.

ndeavouring to pass a bougie, it now and then happens
thra is torn through; and unless attention is paid to
tance, may give rise to a troublesome extravasation of

uspect a tear of the urethra, immediately withdraw the instru-
ıire the patient, if possible, to retain his urine, that it may not
ound, and also to prevent its escaping through the opening,
extravasated in the surrounding cellular substance. In this
time for a clot to form over the surface of the wound, a slight
ammation is excited, and it becomes healed by the adhesive
ut any further mischief.

ı respect to burning away strictures with escharotics,
particularly careful to prevent them getting in con-
ıy other part than where their presence is absolutely

ise you never to use the caustic alkali as a substitute for lunar
nuch too soluble, and by running over an extended surface, is
›roduce a great degree of inflammation.

modic Stricture:—Arises either from a contraction
cles surrounding the urethra, or from the urethra

›dic stricture is usually, I believe, more or less, connected
nt stricture; and I am of opinion, that the spasms commonly
ıcular part of the urethra.

modic stricture may arise from various causes, and attacks individuals of all ages. Common accidents will sometimes will give rise to it; even an operation for an aneurism.

The complaint usually comes on of a sudden, is *unattended* with pain, and the first notice that a patient has of it is, that he experiences a difficulty in voiding his urine.

16. *Treatment of Spasmodic Stricture:*—This must consist in the introduction of a bougie, and if necessary, other surgical and medical means.

You should introduce a bougie, letting it steal gently along the urinary passage, and when it arrives at the strictured part, there let it rest for a short time; after this, you should gradually push it forward, using only a very slight force, but continuing that force until you have succeeded in passing the stricture. Let the bougie rest for a minute or two in the strictured part, and then withdraw it; directly that you do so, the person will be enabled freely to pass his urine.

If the attempts of introducing a bougie do not answer, other means must then be resorted to; as calomel and opium; antimony; tobacco enema; warm bath and cold bath.

17. *Inflammatory Stricture:*—This kind of stricture is generally produced by the inflammation of gonorrhœa; but there is another mode by which it is caused, and that is, the introduction of a bougie.

The passing of bougies, although done with care, will sometimes give rise to a violent inflammation of the urethra.

18. *Treatment of Inflammatory Stricture:* — Under this complaint, you must not think of introducing either a bougie or catheter; but by a regular and judicious antiphlogistic treatment, you will be able to afford relief.

When a person comes to you, having retention of urine, with dreadful pain in the urethra, you should immediately take blood from the arm, in such quantities as to produce syncope, administer purgatives, apply leeches to the perinæum, and put the patient in a warm bath; you will also, in this laint, find antimony and opium in a state of combination, particularly eable.

The consequences of stricture of the urethra are very rous.

t, in very bad cases, a great dilatation of the urethra behind the ure:—secondly, a considerable thickening of the coats of the bladder: dly, enlargement of the ureters, an effect of their being distended with during the retention common in the advanced stages of stricture;— ly, the kidneys are often diseased, their glandular structure being mes entirely destroyed;—lastly, the prostate gland is frequently en- , and abscesses are occasionally formed in it, with fistulæ leading from to the perinæum, or parts around, and its natural ducts are often erably dilated.

ESSES FROM GONORRHŒAL INFLAMMATION, &c.

Abscesses in the Lacunæ:—After the violence of the go- œal inflammation has subsided, you will frequently find a number of small abscesses along the urethra.

will frequently feel along the under surface of the urethra, a number ll knotty tumours; these, in the course of a short time, successively rge themselves into the urethra, and the swellings then subside. Some- these swellings break externally to the urethra, thus forming a double ag.

The most frequent situation of abscesses in the urethra, gonorrhœa, is the lacuna magna opposite to the frænum. likewise form between the lacunæ and the scrotum.

en you feel an abscess moving about the scrotum, and that abscess ing after the inflammation attending gonorrhœa, you may be pretty at it has been formed in the lacunæ, opposite to the scrotum, and will troublesome to the practitioner, and dangerous to the patient; for in this situation, abscess after abscess will frequently form, until the patient sinks under the long continuance of the severity of the complaint.

3. *Abscesses in the Perinæum:*—The next situation in which we find abscesses that are produced from the same cause, is in the perinæum, giving rise to swellings there, of considerable magnitude. If the inflammation is not checked in its progress, it will give birth to these abscesses, which, if permitted to remain, will at length break through the integuments, and matter and urine will be discharged through the opening.

The passage leading from the external wound to the internal, is exceedingly tortuous, so that upon introducing a probe, it will not directly enter the urethra; indeed you will find great difficulty in getting it there, from the winding and irregular course of the canal which the matter has formed. The nature of the wound will at once shew you that the urine may easily become extravasated into the cellular membrane of the neighbouring parts. From the pressure which these abscesses make upon the urethra, they very frequently give rise to retention of urine.

4. If the inflammation continues to extend, it will be the means of producing abscesses in the follicles of the prostate gland.

These likewise will occasion retention of urine, and, upon introducing a catheter to relieve this, it occasionally occurs that the catheter will enter an abscess, and a considerable quantity of matter will pass through it before any urine makes its escape; at length, after the whole of the matter has been evacuated, the cause of the retention having been removed, the urine can be freely expelled from the bladder.

5. It occasionally occurs that the two last varieties of abscess I have mentioned, by being neglected, have led to the formation of fistula in ano.

The true character of the fistula may be learnt by observing that a few drops of urine will, at different periods, run from it; and this will of course convince you that it is connected with the bladder.

. *Treatment:* — Abscesses of the lacunæ of the urethra, ing from gonorrhœal inflammation, should be continually lticed until the matter is discharged.

ter you are satisfied that it has once formed, it is not right to let the ab- es break of themselves. When, therefore, the hard knot that you feel e urethra, becomes converted into a fluctuating tumour, connected with kin covering it, the sooner you open it the better.

. When the abscesses are situated in the lacunæ opposite to scrotum, the treatment must be exceedingly prompt, for if not, you will endanger the life of your patient.

to these abscesses make early and free incisions; let your incisions be of iderable size, and a great deal larger externally than internally; I gene- r make these incisions in the middle of the septum, at the anterior part he scrotum.

. When you are called to cases of abscess in perinæo, it is essary that you should be particularly decisive in your manage- nt of these complaints, for the purpose of guarding against t troublesome and dangerous disease, fistula in perinæo.

f called to a case of abscess in perinæo, the best plan of treatment that can pursue, is immediately to introduce a catheter, made of *elastic gum;* will relieve the retention, and obviate much irritation; apply leeches l evaporating lotions to the swelling, and keep the bowels open by cooling atives. If these means should not succeed in dispelling the tumour, the ment that you can distinctly feel fluctuation, you should make such an ning with the lancet, as will allow the matter to escape, to prevent its rowing under the skin and producing additional mischief; it will save the ient much pain, and will probably lead to the speedy cure of the disease, ich might otherwise prove not only protracted, but fatal. Remember you not only to open the abscess early, but keep introduced in the bladder, an stic gum catheter.

9. In the treatment of abscesses of the lacunæ of the urethra d perinæum, it is of the utmost importance that you should tend to the state of the patient's general health, for these ab-

scesses often form in broken constitutions, and it is impossible to cure them while the system is in a depraved and debilitated state.

You should therefore prescribe alterative tonic medicines, nutritive diet, and country air: attention to the state of the constitution will sometimes cure these abscesses, after every local remedy has failed.

10. *Extravasated Urine:*—Extravasation of urine, from bursting of the urethra, can never happen without the grossest neglect on the part of either the surgeon or the patient; unless, indeed, in the cases of unfortunate sailors, who have been so situated that they were incapable of procuring medical advice.

You may see these poor fellows brought into the hospital, in the most horrid condition from rupture of the urethra, and the escape of the urine into the cellular membrane of the surrounding parts; the scrotum is in these cases of a purple cast, and extremely distended; and when the urine is allowed to escape, it will sometimes prove successful; but, at others, the entire scrotum will slough, together with a considerable portion of the surrounding parts, and sometimes lead to the death of the patient.

11. *Treatment:*—This must consist in making an incision for the escape of the urine, and paying attention to the stricture, which is the cause of the accident.

When you see a case of this description, you should immediately make, into the scrotum, an incision at least two inches in length; this incision should be in a direction *upwards* and *backwards* towards the nates.

12. *Irritable Urethra:*—The irritable state of the urethra, if attended with inflammation it is of the chronic kind; and persons suffering under the complaint, have a frequent desire to make water.

The affection may be readily removed by giving, three times a day, an eighth part of a grain of the oxymuriate of mercury, and a drachm of the nitrous spirit of ether. These should be continued for a little time, and the complaint will disappear.

AFFECTIONS OF THE PROSTATE GLAND.

1. There are three species of disease, exclusive of the forma- n of calculi, by which the prostate gland is affected; viz. acute flammation, chronic inflammation or enlarged prostate, and the gous polypi.

2. *Acute Inflammation of the Prostate Gland:*—This com- int is not confined, like the chronic enlargement, to late periods life, but attacks persons of any age, and generally terminates uppuration.

he most prominent symptom which characterizes this complaint, is eat pain immediately after discharging the urine, and in this respect, disease resembles stone. As the inflammation advances, an abscess will roduced in the gland, and retention of urine the consequence.

. Your treatment, in this case, must consist of blood-letting, administering mild laxatives, together with antimonial medi- es. It is also necessary the catheter should be used.

ou, therefore, pass a common catheter, and about the fourth day you perceive that matter escapes through it; so that this, coupled with other mstances, stamps the nature of the complaint. Rigors do not attend formation of this matter.

. *Chronic Inflammation or Enlargement of the Prostate nd:*—This is the consequence of age, and not of disease; and haracterised by a number of symptoms sufficiently particular listinguish it from stone.

these cases there is sometimes partial retention of urine; the patient long time voiding his urine, which has a particularly powerful smell, ng from its being ammoniated in consequence of its long continuance in ladder. The next symptoms observable, are pain and numbness in the s penis; *the prepuce not possessing* its usual sensibility; there is a sense of weight and uneasiness in the perinæum, relieved by pressure with the finger; pain in the back of one or both thighs, in the loins, and at the origin of the sciatic nerve, and course of the ureters; and the fæces are flattened from the pressure which is made upon the rectum by the swollen gland. The urine finally acquires a highly offensive ammoniacal smell, and at length becomes white or milky, and when long retained, brown, and even bloody.

5. If the enlargement of the prostate gland continues to proceed for a length of time, it will, in many cases, occasion a complete retention of urine.

This may, however, be the effect of retaining more urine in the bladder, and for a longer period, than it ought, or it may be the result of checked perspiration; but in either of these cases, exciting a copious perspiration will often afford relief.

6. The prostate gland may increase to an enormous size, laterally, without giving rise to retention of urine; but the enlargement which occurs posteriorly in the third lobe, frequently occasions retention, for the enlargement is situated immediately behind the orifice of the urethra, so that the urine collects behind the swelling, presses it upon the mouth of the urethra, and forms a complete barrier to its passage.

From the appearances on dissection after death, as the prostate enlarges, it is pushed forward: in consequence of which, the urethra becomes curved immediately before the apex of the prostate; indeed, the coming forward of the prostate, causes the urethra almost to double upon itself; the curve thus formed, is at the symphysis pubis, and it is in *this* situation that the difficulty of passing the catheter in diseased prostate is found. Tracing on the course of the urethra, behind the curved part, that canal is seen much enlarged. The next thing we observe is, that the urethra itself is considerably enlarged, that is from an inch and a half to two inches, which increase of length is behind the pubes, and it is owing to this circumstance that you are under the necessity of carrying on the catheter so great a distance after its point has passed the arch of the pubes.

We also find the bladder much enlarged in this disease, as also the ureters and the pelvis of the kidneys.

ith regard to the cause of retention of urine, in those enlargement of the prostate gland, where the disease the *third* lobe, it generally arises from the urine having wed to remain in the bladder for too long a period; this g in so large a quantity that the swollen lobe is pressed against the mouth of the urethra, and thus closes the to that canal.

argement of the prostate laterally, may be readily ascertained by g the finger into the rectum; but the enlargement of the middle t be so learnt. In what way then? Why, by the introduction of r or bougie (and the latter is the best); it will be found to stop you are then to introduce a catheter, for the purpose of drawing ter; the instrument will be resisted in its common course, and you *ess* the handle a good deal, with a view of tilting its point over the land; thus the end of the instrument will be rising perpendicularly, , behind the pubes.

reatment of Enlarged Prostate:—Your object of treat- ould be to act upon the gland, by means of small doses xy-muriate of mercury, when the enlargement is the nplaint; but if there is retention, you must relieve this n, and afterwards guard against its return.

no urine passes whatever, and when there is great pain at the neck dder, you should take away blood from the arm, apply leeches to eum, administer purgatives, and put the patient into a warm bath. neans should succeed in procuring relief, the best medicine that can s be given for the purpose of preventing a return of the retention, e same time, of lessening the inconvenience which sometimes attends laint, is composed of fifteen drops of the liquor potassæ, five drops lsamum copaibæ, and an ounce and a half of the mistura cam- This is the best medicine you can use; it will afford consider- f, which is all that you can expect, for you must not dream of cure.

hen you are called upon to relieve retention of urine, larged prostate, by the introduction of a catheter, the instrument should be fourteen inches in length, and a quarter of an inch in diameter. In consequence of the pressure within, a broad instrument will answer better than a narrow one, for being bulbous at the end, it will readily ride over the enlargement.

When introducing the catheter, you will meet with no difficulty until you reach the curve, which the enlargement of the gland has produced in the urethra; the handle of the instrument is to be here slightly raised, for the purpose of insinuating the point through the curved part. Having passed this, you are then to depress the handle completely between the thighs, so as to occasion the point of the instrument immediately to rise perpendicularly above the pubes, in which way, it will readily enter the bladder.

10. In the treatment of enlarged prostate, an elastic gum catheter is sometimes introduced into the bladder, and kept there for a continued relief to the patient. In passing an elastic gum catheter, the removal of the stilette will sometimes cause it to enter with ease, when it would not previously pass at all.

If it be deemed requisite to leave the catheter in the bladder, I should prefer one of pewter, for it can be curved down before the scrotum, and, by plugging up the end, the patient may move about as he likes, and at any time he wishes, can expel his urine.

If a pewter catheter is used, it should be quite new, and ought not to be worn for a longer period than a fortnight, for the urine acts upon the metal, renders it brittle, and may probably cause the instrument to snap.

11. *Fungous Polypi of the Prostate Gland:*—The last circumstance connected with the prostate is fungous polypi growing from its base.

I am not aware of any treatment that is likely to be successful for the removal of this disease: it appears to be entirely out of our reach.

PROLAPSUS ANI.

1. This is a complaint in which the rectum protrudes in a eater or less degree at the verge of the anus.

It may occur either from mere relaxation of the internal membrane of the wel, or from a real displacement and inversion of its upper portion, which sents itself as an external tumour.

2. *Causes:*—The causes of prolapsus ani, may be relaxation the parts; irritation of the rectum by the use of aloetic purga- res; worms; hemorrhoids; violent exertion for the expulsion hardened fæces; and so on.

The disease occurs in persons of all ages; but it is most common in infants d elderly subjects.

3. *Prognosis:*—Considering the degree of the complaint, and e occasional closeness of the stricture, the symptoms are gene- lly mild; the rectum generally bearing pressure, exposure to he air, and other kinds of irritation, better than any other owel.

The urgency and danger of a prolapsus ani are greatest, when the swell- g is large, recent, and conjoined with violent pain, inflammation, and brile symptoms. When complicated with strangulation, the consequences ay be a stoppage of the fæces, severe pain, swelling, inflammation, and ven gangrene, within the cavity of the abdomen.

4. *Treatment:*—This embraces three principal indications; iz. the speedy reduction of the prolapsed part: the retention of e reduced bowel; and the removal and avoidance of the uses by which the disease is induced.

5. First:—In general, when the case is recent, and
not of immoderate size, its reduction is readily effect

The patient being laid upon his back, the finger being c
piece of soft linen, oiled, or a cone formed of stiff paper, i
duced at the aperture in the prolapsed intestine, when gentle
be made until the whole be returned to its original situation
pushing back the last protruded portions:—after which, a t
so graduated in size as to adapt itself to the space between t
steeped either in red wine, or in some astringent lotion, as a
of alum, should be bound on the part by means of the T banda
Should there be much inflammation, fomentations, or the
water, should be applied to the parts previous to any attempt a

6. The second indication may be answered, by r
internal and external administration of tonics and
more particularly if the disease arises from debility.

The reduction having been effected, it is proper to introd
finger into the rectum, in order to ascertain, that no inter
above the anus within the sphincter. The bowel is then to l
place by quietude and the recumbent posture, and, if there b
dency to relapse, it will be proper to apply to the fundame
sponge, or compresses, supported with the T bandage. The r
likewise may be used, are, daily affusions of cold water; loti
tion of alum, and sulphate of zinc; glyster of decoction of
wood; astringent injections; a spirituous infusion of oak-ba
water; decoction of oak-bark with alum; and other tonic a
applications.

7. The last indication in the treatment, is the r
avoidance, of all such causes as are known to have a
bring on the complaint.

In infants, a fresh protrusion of the rectum may sometimes
by making them sit on a high close-stool, with their feet h
down. Every thing tending to cause either diarrhœa, or costiv
be avoided.

8. With respect to the still further treatment of pr

e means fail in effecting a cure, the patient may be
a slight operation.

**make a little incision by the side of the sphincter ani, with a
ucing the adhesive inflammation, so as to glue the rectum to
tissue surrounding it. This cannot, however, be done without
:tain constitutions.**

IRRITABLE BLADDER.

ing the latter stages of gonorrhœa, it often happens
tient is annoyed by a frequent desire of voiding his
ng from an irritable state of the bladder; this symptom
ecomes so urgent, that the inclination occurs so often
n minutes or quarter of an hour. The complaint will
:d from retaining the urine too long.

**that the patient feels, is in exact proportion to the quantity
tained in the bladder; the greater the quantity, the more severe
ain.**

**s in this complaint, the urine will be mixed with blood; this ap-
:alculated to deceive you, and excite a suspicion of the existence
1 induce you to pass a sound, for the purpose of satisfying your
r, in this disease, the introduction of an instrument into the
ghly improper, as it would produce additional irritation.**

may readily distinguish this complaint from stone;
able bladder, the pain is felt when the bladder is full;
se of calculus, the pain tortures when nothing but the
ins.

**ladder of itself is a dreadful disorder, the patient's life is a
him, he is obliged to keep from society, and linger away his
*s in solitude.***

3. *Treatment:*—Your treatment must be both med surgical, for unless they are combined, you will not avai but your first object should be to keep the bladder in a rest, nothing can be done without it.

To keep the bladder in a state of rest, a short catheter shoul introduced. A flexible catheter is the one that you are to e should only just enter the bladder, and when sufficient has been i the remainder may be cut off; it should be tied to a bandage carrie the thighs and round the loins. The instrument thus used great ease, and keep the bladder at rest by allowing the urine as fast as it streams from the ureters; thus keeping the blad nually empty.

In your medical treatment, opium should be given in doses o to two grains, with a view of allaying the pain and irritation, a same object, five or six grains should be introduced into the rec form of suppository. The liquor potassæ with opium or some bitt is also recommended; castor oil as a purgative; and after shavi hair, a blister should be applied over the region of the pubes: t irritation thus produced, will prove of infinite service.

4. Sometimes irritable bladder goes on to ulcerat urine will then be mixed with blood, there will like discharge of bloody mucus, and the inclination to void will be more frequent, and exceedingly urgent.

If the bladder should be ulcerated, you must pursue *exactl* plan of treatment, it is the best that can be adopted; for, by k bladder at rest, you afford the sores an opportunity of healing.

MUCOUS DISEASE OF THE BLADDER.

5. This disease is known by the discharge from the of an enormous quantity of ropy yellow mucus; so thi hangs to the sides of the vessel.

This mucus is produced from the internal surface of the kidne and bladder.

i. *Treatment:*—The treatment of this disease, like that for
table bladder, must also be medical as well as surgical.

**itroduce a short catheter, as in the last case, and give your patient one-
ith of a grain of the oxymuriate of mercury, three times a day, and
wise three times a day you should give one drachm of the nitrous spirit
ether, with an ounce and a half of the camphor mixture; soda water
ld also be plentifully drunk. But the best remedy that can be given is
balsam of copaiba; no medicine so completely robs the urine of mucus
his. Eight or ten drops three times a day, will be found quite sufficient:
ay be given in conjunction with the medicines before mentioned, or in
ilage and water.**

PARALYSIS OF THE BLADDER.

'. Now and then a paralytic state of the bladder takes place.
these cases, the urine will not pass when you introduce a
heter, if the patient is in a recumbent posture; but if he
nds upright, the pressure of the super-incumbent viscera on
bladder, will occasion it to flow in a full stream.

**he treatment which I have adopted in paralysis of the bladder, has
a, blisters to the loins, and the exhibition of a pill twice a day, composed
ive grains of the chio turpentine, and a quarter of a grain of powdered
tharides.**

HEMORRHAGE FROM THE KIDNEYS.

I. It occasionally happens that persons will be troubled by
quent bleedings from the kidneys.

**n these cases, you must order the recumbent posture to be rigidly adhered
in order to give the vessels an opportunity of closing, and to be con-
ned for some time after this has taken place. The balsamum copaibæ
uld also be prescribed in small doses. The diet low.**

CHORDEE.

1. A chordee is a painful erection of the penis, during which, it is drawn violently back or to one side.

2. Chordee arises from an inflammatory condition of the corpus spongiosum, and the pain is produced by the dilatation of the vessels, from the influx of blood, to cause an erection.

When inflammation from gonorrhœa is not confined merely to the surface of the urethra, but affects the corpus spongiosum, it produces in it an extravasation of coagulable lymph, as in the adhesive inflammation, which, uniting the cells together, destroys the power of distention of the corpus spongiosum urethræ, and makes it unequal in this respect to the corpora cavernosa penis, and therefore a curvature takes place at the time of an erection.

3. This complaint is exceedingly painful, and is more frequent in its occurrence during the night than in the day.

Your treatment must consist in the application of poultices, fomentations, and leeches. During the night, the penis may be enveloped with linen, wetted with the white wash; evaporating lotions may also be employed. The best medicine you can give is twenty drops of the liquor potassæ, three grains of the extractum conii, and ten drachms of the mistura camphoræ, three times a day. You may also give a pill every night, composed of a grain of calomel, a grain of opium, and two grains of camphor; this will be found materially to abate the pain, and will be productive of much comfort.

4. Very frequently after the painful erections have disappeared, there will be a considerable degree of hardness left, but easy of removal.

For this purpose you should rub the part with camphorated mercurial ointment, and apply some of the same ointment on silk.

5. Sometimes after a person has had gonorrhœa very severely, the dorsum of the penis will become extremely hard,

i, upon examination, to feel ossified. This is called *chronic hordee.*

To remove this complaint, you should direct the linimentum hydrargyri to e rubbed on the part night and morning; or you may order it to be kept vered by a plaster of the ceratum saponis: this acts like a poultice, and, hen the complaint is recent, will answer the purpose very well; but when long standing, you must have recourse to the mercurial liniment, and even is will often fail, owing to the extremely thickened state of the tendinous eath of the dorsum.

HEMORRHAGE FROM THE URETHRA.

1. This sometimes occurs from the rupture of a vessel during flammation; at other times, and more frequently so, it is used by the introduction of a catheter or bougie.

Treatment:—Press the finger and thumb upon the urethra, deep in the rinæum, and observe if you command the bleeding; if you do not, bring ur hand a little nearer towards you: proceeding carefully in this way, you ll at last learn the precise spot from whence the blood flows, which you ll generally find to be from that part of the urethra opposite the symphysis bis. If you continue to press with your finger and thumb for a quarter of hour or twenty minutes, the bleeding will cease; but as this would be ious, and often inconvenient, a compress placed upon the part, and secured a roller carried round the loins, and brought up between the thighs, will wer equally well, and perhaps better, as it may be worn for an hour or if deemed necessary. You may give to the patient some aperient medi-e, and, to lessen the disposition to bleeding, you may take blood from the .

INFLAMMATION OF THE TESTICLE.

I. *Inflammation of the testicle* and epididymis do not occur

humoralis, in consequence of a belief that it arose from a
to the testicle.

2. Inflammation of the testicle generally sh
within ten to fourteen days after the gonorrhœal

The first symptom, is a sensation of a drop of urine in
this time, the inflammation is proceeding down the ure
reaches the testicle, affects the prostate, vera montanu
proceeds up the cord to the abdominal ring, then attac
and finally the testicle itself.

While the inflammation is confined to the epididymis
little or no pain; but when it has passed to the body of
there will be felt excessive pain in consequence of the un
the tunica albuginea. The scrotum is sometimes reddene
degree of violence which characterizes the inflammatio
not, generally speaking, correspond to the course of the
now described.

3. *Treatment:*—This must depend entirely o
the complaint, and whether it will yield to sim
go on to suppuration.

First order a suspensory bandage: give the patient tw
and colocynth pills; and in the morning, a dose of infu
sulphate of magnesia. Apply to the testes, a lotion com

scribed with advantage, as they unload the vessels, and act beneficially the same manner as leeches. At the same time, purgative medicines uld be freely given.

4. In some irritable constitutions, even all the remedies which have named, will not be successful; the pain and inflammation ill continuing, you are under the necessity of employing anoynes; and it sometimes happens that notwithstanding all we n do, abscesses in the testicle will form.

The best form of anodyne is ten grains of the compound powder of ipecuanha with two grains of calomel every night, and sometimes night and rning. If the inflammation goes on to the formation of abscesses, we ust then apply poultices and fomentations, for the purpose of bringing em to a speedy issue. After the discharge of matter, should any sinuses main, you must inject with a solution of sulphate of copper, in the prortion of two grains to an ounce of water; diluted sulphuric acid is occanally used, but I give the preference to the former. The reason that ere is so much difficulty in getting these sinuses to heal, is that the semen is uid which is constantly secreting day and night, consequently the adhere inflammation is interrupted in its progress.

5. There very frequently sprouts out from the sinuses just luded to, a fungus, though not of a malignant character; but sembling those shooting from the brain.

The treatment consists in paring them off at their roots, and then bringing e edges of the external wound in contact.

WASTING OF THE TESTES.

1. This sometimes takes place, and is produced by two causes, sorption and ulceration, and it generally occurs in early age.

It is a curious circumstance, that if a boy of fifteen or sixteen gets a gorhœa, that it is often *succeeded by* a wasting of one or both testicles.

This effect is not the result of gonorrhœa only; but any cause producing inflammation of the testicle, in very young persons, will now and then lead to a similar misfortune.

2. *Treatment:*—The only course likely to prevent their entire decay, is probably to employ them, to render them active, before the whole of the glandular structure has become absorbed.

If, however, the inflammation of the testicle has been very severe, that alone is sufficient to derange the glandular structure in very young persons. I have known both the testicles to waste from the formation of scrofulous abscesses.

SYMPATHETIC BUBO.

1. This is usually the result of inflammation of the glands of the penis. The inflammation extends on the outward surface of the glands, the absorbents of the dorsum of the penis become enlarged, and, if you rub your finger along the dorsum, you feel them hardened like a knot or cord, and frequently connected with the glands near the pubes.

A bubo of this kind rarely suppurates: now and then you will meet with one that suppurates, but only in very irritable constitutions. When the inflammation extends from the penis to the glands of the groin, these become inflamed also and enlarged; and it is not at all surprising for a swelling, after a gonorrhœa, to come on in the groin; a patient under such circumstances is afraid of bubo, and alarm is excited in his mind of its being syphilitic: you may, however, calm his fears, and tell him that it is a common concomitant of gonorrhœa, and that he need not be uneasy.

2. The distinction between a sympathetic bubo, and one from *syphilis*, consists in this circumstance:—in general, one gland

s enlarged in syphilis; but in a sympathetic bubo, you requently find a chain of glands affected.

e groin, there are two sets of glands, one just above Poupart's liga- nd the other two inches or an inch and a half below it; the lower is enlarged from sympathy, the upper frequently.

Treatment:—The plan of treatment in sympathetic bubo, same as that for inflammation in any other part of the you purge the patient, apply leeches and an evaporating , and advise him to diminish his quantity of exercise.

ther the gland will suppurate or not, depends greatly on the mode ment; if mercury be given, it will be hurried into a suppurative ; therefore it should not be used so as to produce a mercurial action ystem, but connected with aperients it is proper.

GLEET.

leet is a disease very difficult of cure. It is said to be e of gonorrhœa when the discharge ceases to be infec- it for my own part, I doubt whether the gonorrhœal ever ceases to be infectious; consequently, I consider t to pronounce that the discharge from gonorrhœa minates in gleet, never loses its power of producing

rge of gleet is generally transparent at first, afterwards yellow, is much excitement, green. If the excitement is very consi- lischarge will be tinged with blood. It is rendered purulent m excesses of different kinds.

scharge of gleet does not proceed from the vesiculæ Cowper's glands, or the prostate, but from the

urethra; when a person has a costive motion, a drop or
ropy fluid, proceeds from the vesiculæ seminales, and
discharge from that called gleet. Sometimes there will
a stricture, but it does not produce infection; and not
a discharge from the urethra, from an abscess of the
virile nature.

3. *Treatment:*—As we have before mentio
gleet is a very difficult thing to accomplish, an
make use both of constitutional and local remedi

The constitutional treatment consists in the exhibition
æther, and the balsam of copaiba; from two to three dra
a drachm of the latter, in four ounces of camphor mix
an ounce of mucilage, will form the best mixture. A la
may be taken three times a day. If this should not succe
quarter of a grain of cantharides, (three times a day,) m
five grains of the chio turpentine.

4. When the constitutional treatment is u
must have recourse to bougies and injections.

A bougie should be passed every other day, accordin
of the patient, making use of an injection at the same t
apply to the urethra, the unguentum hydrargyri nitratis;

In such cases, it usually gives suspicion of a fresh infection; but, the difference between this and a fresh infection is, that here the return is almost immediately after the connexion.

6. Gleets in women are cured nearly in the same manner as those of men.

Turpentines, however, have no specific effect on the vagina; and the astringent injection used may also be stronger than those intended for male patients.

GONORRHŒA, ETC. IN FEMALES.

1. Gonorrhœa in females is rather less violent than in males; and the seat of the complaint is in Cowper's glands, on each side of the urethra, at the os externum.

In gonorrhœa with females, there is a great degree of surrounding inflammation; the orifice of the meatus urinarius, and the lacunæ, discharge matter. There is pain in making water, and in some severe cases it commonly happens that there is considerable irritation of the bladder; of which, the shortness of the meatus urinarius is the cause; the inflammation at the orifice extends down the meatus urinarius to the internal coat of the bladder. The meatus urinarius, Cowper's glands, and the extremity of the vagina, are red, and the carunculæ myrtiformes swollen.

2. *Treatment:*—As to the treatment of gonorrhœa in females, you must depend on diluent drinks, and purgatives, and appease any local inflammation by the use of lotions.

We have no medicine which has a specific action over the discharge in females, and the best lotion you can recommend, is the liquor plumbi subacetatis dilutus; a sponge dipped in this, should be introduced into the vagina, and be allowed to remain there, though often changed.

3. *Pudendal Discharge:*—Children from one year old, and

even under, up to the age of puberty, are frequently th of a purulent discharge from the pudendum, chiefly o beneath the preputium clitoridis: the nymphæ, orifi vagina, and the meatus urinarius, are in an inflamed pour out a discharge.

The bed linen and the rest of the clothes are marked by thi and from its bearing a strong resemblance to gonorrhœal m repeatedly been thought by parents that their child has be suspicion has been excited against some unfortunate person as t and several cases have actually received the punishment of the offence of rape, because the medical witnesses were not cons true nature of the affection; therefore, my young friends, be careful to bear this complaint in mind, and never let it be you the ignominious death of an innocent fellow-creature.

4. When a child labours under this discharge, the of the parts, slight inflammation, and this sometimes and goes on to ulceration.

Notwithstanding violation has been suspected, from the dis you must be cautious in admitting the evidence of the child it last paragraph fully shows, that although the parts may be ulceration) it is no further proof that a rape has been committed

5. The treatment you must adopt in cases of pu charge, is the lime-water with calomel, applied to and give calomel and rhubarb, combined with jalap.

LUES VENEREA, OR SYPHILIS.

1. There are two poisons, as I have before mentic municated by venereal intercourse, the one of gonoi the other of syphilis.

One, the poison of gonorrhœa, which falling on a mucous surface, proces from that surface, a discharge of matter which is infectious; the her, the poison of syphilis, which applied to the skin, or, as far as is at sent known, to any surface, produces inflammation and ulceration, ming a sore called chancre; which, being received into the glands of e groin, occasions bubo; and, being conveyed into the system, circulates ith the blood, produces ulceration on different parts of the body, on the ucous membrane of the throat, the skin, the periosteum, and bones.

2. We will first go through the various symptoms or conseuences of syphilis, and then institute more inquiries on the true ture of the complaint.

CHANCRE.

1. The time at which the effect of the poison that produces ancre, makes its appearance, is uncertain; the chancre, hower, generally appears three or four days after connexion, and om four to seven days is the average time.

The poison first produces inflammation, then ulceration; the inflammation attended by a pimple arising from the surface affected, which is like a mmon pimple, excepting that it is of a deeper colour; instead of being ite florid, it is of a darker hue. The pimple is surrounded by a kind of ysipelatous inflammation; an ulcer forms in the centre, and then a pit rms in the body of the sore, which is often of considerable magnitude, and tends beneath the skin. The surrounding edges of the sore are hard and gged, its surface is yellow, and the margin red; and if you were asked if sore was a chancre or not, you would answer, I must feel it first, and not cide by merely looking at it. You would then lift up the part between ur fingers, and, if you found a *hardness* beneath, this would be a very od criterion of its being a syphilitic sore, for it is neither in the ulceration, r in the yellowness of the surface, nor the ragged edges, but in the colour d hardness of the sore, that the characteristic marks of chancre manifest emselves: from the presence of these, you form an opinion, and are abled to say positively *if the sore* be a chancre.

2. Chancre assumes very different appearances in persons, and also in the same person, under different irritation, and according as it is accompanied by more inflammation.

So that if you ask me whether it is possible to determine, th the penis is not chancre, I should tell you, that I believe it im any man positively to say that it is not.

3. We will now speak of the varieties of chancr causes which more frequently produce them.

4. If the poison be applied to a sore, or an exc produces ultimately a syphilitic action, as is witnessed in bubo and secondary symptoms; but it is a long t the venereal action is excited, and in these cases, yo that the sore has neither a surrounding hardness, colour.

When the chancre is produced by the application of the v to an excoriation or tear, there is some difficulty in pronouncin the sore may have the appearance of being syphilitic, but you before you give a positive opinion: it requires time to decide may say to the patient, that there is considerable doubt as t of the sore; it may be simply an excoriation, or on the other be a syphilitic sore; your best plan is, merely to apply some sin tion to the part, and wait, if it be syphilis, till secondary symp when you must have recourse to mercury for the treatment of th

5. Chancre situated on the frænum, is different been described attacking the other parts.

A chancre in this situation, generally rapidly destroys the mercury be given early; it is more irregular in its appearance in other parts, and does not assume a character similar to those glans.

6. When a chancre is situated on the prepuce, it i

terized by some peculiar symptoms; and likewise when seated
the corona glandis.

the chancre happens on the edge of the prepuce, a good deal of effusion
the cellular membrane takes place, and *phymosis* is produced: when
sore is situated just where the skin doubles over the penis, it is extremely
blesome: there is considerable swelling, also a difficulty in drawing back
skin. In this situation it seldom fails to produce phymosis.
the chancre be on the corona glandis, or between it and the frænum,
often find it extending deep, and producing sloughing of the part, and
of the glans itself, which is not at all an uncommon result of deep
ed chancre at the corona glandis.

. Another circumstance which gives rise to a variety in the
earance of a chancre, is when it ulcerates deeply into the
lular tissue; a chancre on the surface of the skin is very
htly irritable, but if it passes the skin, and extends into the
lular tissue, it assumes a disposition to ulcerate and slough.

chancre on the skin heals under the use of medicines and external appli-
ons; but, if once it enters beneath the skin, and inflames the cellular
ie, it becomes irritable, sloughs, and is attended with danger, the danger
ing when the chancre extends beneath the part on which it began.
hen chancre is on the surface of the skin, and does not produce deep
mation, it is a disease slow in its progress, and easy of cure; but if, on
other hand, it extends deeply into the part, it proceeds with rapidity,
those acquainted with the disease dread it, knowing the extended slough-
which will be produced.

. Of all the causes of varieties of chancre, one of the most
nmon, is the habit and constitution of the patient. The variety
not only produced by the previous mode of living, and the con-
tution of the patient, but any act of intemperance, excess of
kind, or any thing that hurries the circulation, will alter the
ion of the part.

o, if two persons be attacked with chancre, the one not of an irritable
it, and the other being very irritable, you will find in the first that there
uld be scarcely any inflammation, whilst in the second it would be vio-

lent, and of an erysipelatous character; indeed, under these circumstances, if the patient be not very carefully managed, he will be in considerable danger.

So a man with chancre to-day, which has a healthy appearance, shall to-night indulge in some act of debauchery; to-morrow he will have a bloody discharge from the sore, inflammation round the edges, and an irritable state of the parts, which you will soon find assuming a sloughing disposition.

9. When a chancre goes on to sloughing, there will be considerable previous inflammation, and a great increase in the frequency of the pulse.

The pulse will be generally from 120 to 130; the inflammation of the erysipelatous kind, extending round the chancre, and, in a short time, the sloughing process commences, by which the penis is lost.

10. The time at which a chancre appears after connexion, is from four to seven days.

If, however, there be gonorrhœa also, it prevents the appearance of chancre so early; so that if a person is affected with the two poisons, the one delays the appearance of the other.

11. *Treatment:*—The use of caustic to the part, is highly objectionable; and all that you have to do, is to counteract the nature of the venereal virus, by a regular mercurial course of medicine.

Order your patient to take five grains of the blue pill, and a quarter of a grain of opium, night and morning; if you exceed this quantity, let him take an additional pill at bed-time. This medicine continued for three weeks, will be quite sufficient for the cure of the disease. All that you want to do with mercury, is just to keep up a mercurial action on the constitution; the patient may pursue his usual avocations; partake moderately of wine, if so accustomed; and his diet must be such as will not disorder the bowels, for which reason he should avoid acids and vegetables, but his food may be as usual.

12. In addition to the constitutional treatment of these cases,

ıke use of local applications, with the view of lessening the ıbility of 'the sore, and to prevent its attacking the neigh- ing parts.

e best application you can use, is the liquor calcis, with calomel; the ate of copper is too irritating; submuriate of mercury sprinkled on the is sometimes beneficial, but it is generally too irritating also. The un- am hydrargyri nitrico-oxydi, I have seen of considerable use after a but it should not be applied at the beginning of the complaint. The entum hydrargyri is a bad application, it is too irritating.

. Sometimes a chancre gets into a very indolent state, and comes necessary to use the nitrate of silver, not, however, a view to destroy the part, but for the purpose of cleaning surface and thickening the edges of the wound.

e skin surrounding the part is thin, and by the application of the nitrate lver, you thicken it, and thus enable it to carry a greater number of ls to produce cicatrization.

. When a chancre has healed by your local remedies, you t not discontinue your mercurial course, but continue it for ime I have before stated, to prevent the recurrence of se- lary symptoms.

vill be proper to heal the sore as quickly as you can, but you must pro- he constitution against the effects of the venereal virus, by mercurial ment.

IRRITATING AND SLOUGHING CHANCRE.

Every now and then a chancre becomes irritable, from es already pointed out, and there will be considerable attend- nflammation.

Directly you see a chancre assume an irritable character, you must desist in the use of mercury; if not, the inflammation will extend.

2. In your treatment, when the chancre has put on the irritable character, lay aside mercury, and have recourse to simple applications, such as poppy fomentations and poultices, to lessen the irritation.

After you have purged the patient, give opium combined with the liquor ammoniæ acetatis, or some other saline medicine. In this way you will diminish the irritation; and, when the surrounding inflammation is got rid of, return to the mercury, taking care to discontinue it if the irritability should return. The compound decoction of sarsaparilla may also be given, but not solely relied on.

3. If a person with irritable chancre is guilty of intemperance, under bad treatment, or is careless of his health, the sore will slough, and often end in the destruction of the penis.

Do not think that it is a rare occurrence for the penis to be destroyed by mercury; no, a chancre that has remained weeks in a healthy state, shall become irritable, and, by maltreatment, by the injudicious and improper use of mercury, shall slough, and end in the destruction of the penis; this is not a rare case, and is attributed to the venereal disease, but in reality is an effect of the improper use of mercury.

4. When you see a sore take on the sloughing appearance, the treatment must be changed, and the employment of mercury suspended.

What you have to do, is gently to stimulate the part by the nitric acid lotion, in the proportion of thirty to fifty drops of the acid to a quart of water. Fomentations and poultices must be sometimes employed, but in general they are not good, they are not sufficiently stimulating; warm spirits of turpentine is also sometimes used, and with benefit. You will be obliged to have recourse to a great number of applications, and frequently to change them, before any relief can be obtained.

5. In addition to the local treatment for sloughing chancre,

must support the patient's strength by a nutritious diet; and : stimulants to assist the efforts of nature, and to increase the ;stive function and the power of the circulation.

hen the patient is very irritable, opium and the compound decoction of aparilla should be exhibited. When the sloughing extends, ammonia bined with opium, will be found of considerable benefit; five grains of sonia, and one grain of opium, three times a day. Musk and ammonia very serviceable compound, which has considerable influence in slough- chancre.

ine and porter must be allowed; porter, if the patient is of an irritable stitution, and wine if he is not: they must be given so as to keep up a rous action, but not to excite a feverish heat.

;. By the means we have now laid down, you will generally a stop to the sloughing stage of chancre, and establish the ient's health.

the chancre slough early, you should not make use of mercury immeely after the healing process has commenced, but wait for the secondary ptoms.

BIBLIOTHECA

CHANCRES IN WOMEN.

. Chancres in women are often worse than in men. They ıck the external labia, not unfrequently the inside of the nphæ, and the os externum vaginæ.

hancres in women are attended with very little irritation; but, if they t in a bad constitution, and extend into the cellular tissue, inflammation sloughing of the part take place; and many lives are lost in consequence.

!. The treatment for chancres in women, is the same as for les.

PHYMOSIS.

1. Phymosis is that state of the prepuce when it is so much constricted as to prevent the glans from being uncovered. It sometimes arises from slight inflammation of the cellular tissue, and effusion of serous matter into it; and it not unfrequently happens that phymosis is the result of chancre.

Here I will observe, that should you find, during a mercurial treatment, considerable inflammation produced round the chancre, lay aside the use of mercury.

2. *Treatment:*—The great secret, in the treatment of syphilis, is knowing when to discontinue the use of mercury; you should always suspend it when the inflammation is increased during its employment; for if you persevere in the use of mercury, you will only add to the irritation, which will end in the sloughing process, and destruction of the part.

If I were to give to a patient, mercury for chancre on the Sunday, and on the following Monday I perceived swelling and inflammation round the sore, I should immediately lay aside the mercury, give active purges, order poppy fomentations, and the parts to be suspended. The black wash should be applied to the sore, injecting it under the skin, unless it should increase the irritability of the part. After the purges, administer opium in considerable quantities, and when you have reduced the inflammation, have recourse to the mercury again, but not before.

3. When there is phymosis, together with sloughing of the penis, you must stop your mercurial treatment, order the patient the recumbent posture, and the part to be well supported.

In these cases you must use fomentations and poultices of a slightly stimulating kind; you must support a gentle stimulating action, in order to produce a secretion sufficient to support the powers of the part; if you sti-

: too much, the part will be destroyed, and if you omit to do it in a gree, there will be no separation of the slough. The poultices we employ, are made with stale beer-grounds: carrot poultices are lating. The medicine we give, is five grains of ammonia, with ten two or three times a day. Forty drops of undiluted nitric acid, to f water, is the best lotion you can apply.

Vhen phymosis remains after the inflammatory symptoms ssed away, it becomes necessary to perform an operation :ure.

eration is exceedingly simple; it consists in introducing a director the skin, along the glans, till it reaches the corona glandis; this is it to which it should be introduced, so that the point should rest he inside of the prepuce; this being done, a sharp-pointed bistoury assed along the director to its extremity, then pushed through the osite to the corona glandis, and drawn out. But when you have s, you will find that the internal part of the prepuce is not divided as the external, which you are obliged to divide a second time. t thing you do, is to apply a piece of lint round the prepuce, which upported on the penis by tape; a roller should be applied, so as to ntle pressure, for the purpose of preventing a secretion from the ssels.

et the patient remain as long as he can without making water, in t to disturb the dressings. When you see him on the following day, the penis in warm water, remove the lint, and draw the prepuce er the glans. This you should do daily, taking care that the edges vided surfaces do not unite. When the part is quite healed, a small only is left in the upper part of the prepuce, which is of very mportance.

n some cases of phymosis, where the prepuce is naturally nd only a small division of the skin is required to allow of g drawn back, it is necessary to remove a portion of the e, by circumcision.

tion:—The prepuce is first taken hold of with a pair of forceps, as the part being left out, as is judged necessary to be removed. The is then accomplished by one sweep of the knife, which, directed lades of the forceps, is sure of making the incision in a straight ular manner. A fine suture is next passed through the edges of the inner and outer portions of the skin of the prepuce, so as to k together. The only necessary dressings are lint, and over it an poultice.

PARAPHYMOSIS.

6. Paraphymosis is a tightness or constriction of th from inflammation, so that after the skin has been pul it cannot be again drawn over the glans penis.

The skin of the prepuce forming a tight ligature round the behind the corona glandis, strangulates it in the same way as t is strangulated in hernia.

7. *Treatment:*—The object in your treatment sh reduce the strangulated part as quickly as possible.

The only proper plan to be pursued is this; you see the p distended with blood, therefore take hold of the glans between and endeavour to empty the vessels by means of gentle pres you have done this for a few minutes, you endeavour to reduce i the glans back, and, at the same time, taking hold of the skin and drawing it forward. By this plan of treatment you wi succeed, if you see the case a short time after it has happened.

8. If paraphymosis has existed for some days, it wil to attempt reduction by pressure on the glans.

In such cases, you should divide the strictured part with a bis you do by separating the skin on each side, as much as you c stricture; you then insert a director under it, and with a s bistoury divide the stricture, which will allow the skin readily over the penis.

After the paraphymosis has been reduced, poultices must be the part.

SLOUGHINGS OF THE URETHRA, ETC.

1. *Sloughing Urethra:*—It occasionally happens in syphilis, it an opening in the urethra is formed to a considerable ent.

. There are three plans of treatment to be adopted in these s, according to the circumstances attending the apertures.

rst:—If the opening is small, a bougie should be passed till there is blished a considerable diameter of the urethra, just anterior to the open- to allow the water to pass freely, when the aperture will soon close.

cond:—If the opening is large, caustic should be applied round the s of the aperture, a little nitric acid will do, which produces a slough he cuticle and cutis; when the healing process commences, it should be ised once a week till a cicatrix forms, and draws the parts together, entirely cures the patient.

hird:—If the first or second plan of treatment is not available, the next e is the Talicotian operation, or the bringing a piece of living skin over aperture. I performed it once, by separating a small piece of skin from scrotum, and applying its raw surface to the edges of the wound; this I t in its situation by three sutures. Adhesive plaster was put over the le, and a gum elastic catheter kept in the urethra.

. *Cicatrized Urethra:*—If there is at the mouth of the thra a cicatrix at all, or the orifice is small, you cannot cure h a stricture in the usual way.

ou must cut off a piece of bougie, and regularly wear it in the urethra, hdrawing it twice or thrice in the course of a day, to allow the urine to s off. The object is to excite a suppurative inflammation, and thus ove the stricture; for when the suppurative process has been excited, the thra has not the same disposition to contract as before.

4. *Closed Urethra:*—Sometimes the extremity of the urethra closed; after making water in a stream about the size of a

bristle, the opening suddenly closes, and the patient ca a drop.

If called to such a case, what you do is, not to open the blad put the point of the lancet into the glans, just at the commence urethra; the urine gushes out by the side of the lancet; and t requires to be worn, to keep the orifice open.

WARTS.

1. Warts were formerly considered as syphilitic, b to learn that they are only a local disease, requiring local means for their cure.

It is a common opinion that they are propagated by the blood such thing; it is by the secretion of matter.

2. Simple local irritation will produce warts. Th from the glandulæ odoriferæ, if not cleaned, will g them, or any dirt between the penis and glans. Th communicated from one person to another.

3. *Treatment:*—The plan of treatment you are to depend upon whether the warts are hard or soft.

Soft warts readily bleed, and may be easily removed: the H sub-acetatis dilutus, applied to the surface of them, will re the oxymuriate of mercury will destroy them; I have used the muriatis, and the black wash and calomel, with good effect. tum hydrargyri fortius destroys them, by producing irritation, and sloughing.

The hard warts are more difficult to remove: they had be ticed first, and then touched with the unguentum arsenicale, contain a drachm of the oxyde of arsenic to an ounce of of the warts should be touched with this application in th ad afterwards the whole. It produces inflammation and sloughing of he warts.

4. Sometimes warts will not give way even to these plans of eatment.

If they should not, you will then do well to apply the powder of savine d subacetate of copper, which is said to be particularly efficacious.

SYPHILITIC BUBO.

1. The venereal poison is taken from the chancre on the nis, to the glands of the groin; and, in its course, usually itates one of them.

Now and then, the matter proceeds through them without producing any tation, but more frequently it excites inflammation, and the common ects of inflammation, if it is not opposed; that is, if a proper treatment be pursued, the gland inflames and suppurates.

2. In syphilis it commonly happens that only one gland is ected in either groin; now and then, the contrary takes place; t, in general, when several glands are enlarged, it is from irri-ion, and not from the absorption of the venereal virus.

Vhen there is only one gland enlarged, and it goes into a suppurating e, it is usually the consequence of the stimulus of the syphilitic virus. erefore you may conclude, if several glands be enlarged, that it is not effect of syphilis.

3. The symptoms of a syphilitic bubo are the same as those common abscess, with this exception, that there are evening cerbations.

syphilitic bubo may be known from a sympathetic swelling in the groin,

by its being in a line with Poupart's ligament; and by the previous existence of a venereal sore on the penis.

4. *Treatment:*—When you are called on to treat bubo, you must pursue a mercurial course, as in ch at the same time you are employing constitutional rem means should not be neglected.

The medicine you should give, is five grains of the blu quarter of a grain of opium, night and morning; the o the disposition to an irritable action being set up in the c the mercury; and, when it is given in conjunction with the you seldom have those direful effects from the syphilitic di the mercury is given alone. If you find the pain in the subdued, you may give ten grains of the blue pill at night, morning.

For local means I would recommend that evaporating loti applied to the part, a bandage should be put round the wais wetted with a lotion, composed of one ounce of spirits o ounces of water, should be kept to the swelling, and fasten by bandage.

5. It sometimes happens, notwithstanding the you employ, the pain, swelling, and the disposition to suppurate, increase.

This will be known by sharp pains darting through th pulsating feel in it; for when these occur, the suppurative nerally commenced: you must then apply evaporating lotio give active purges, and omit the blue pill. The best purgati is calomel in combination with jalap.

When the pain in the part has subsided, you must ret treatment, which will correct the venereal action.

6. When a bubo acquires a considerable mag usually the result of debility, and is very apt to bec when this is the case, you must give up the use of m

Never continue mercury when a bubo is large, it will onl suppurative process; therefore suspend its use, and endeav

e of the swelling and the inflammation by lotions, leeches, and acting on bowels, in order to promote the secretions, for this should be your grand ject in all these cases; take care, at the same time, to give that kind of urishment which will best support the system, without exciting any undue citement. You should also endeavour to promote absorption of the gland, the application of the muriate of ammonia.

7. If the means for preventing the suppurative process do not ceed, suppuration has commenced, and matter can be felt ctuating, it will be right to make an opening for its escape.

he opening should be small, and ought to be made with the lancet, as n as any pus can be felt; by which plan, the surrounding swelling will be ened, the inflammation diminished, absorption rapidly produced, and n you can return to mercury for effecting the cure.

8. Syphilitic buboes sometimes become very irritable, theree, when you have to treat these cases, immediately disconue the use of mercury, and have recourse to other means.

n order to subdue this irritable state of affairs, give opium and the comnd decoction of sarsaparilla, which have the power of suspending the ptoms of syphilis for a time, but will not cure them. When the state of swelling will allow, you can return to the use of mercury to complete cure.

SLOUGHING BUBO.

1. If mercury be continued whilst a bubo is suppurating, as on as ulceration takes place, the sloughing process will follow, d extend over a considerable portion of the cellular tissue.

Destruction of life, in sloughing bubo, takes place from two causes; from extent of the sloughing process, and hemorrhage from the opening of the ral artery.

In these cases, you generally see that there is something
constitution, or that the patient has been injudiciously treated.

2. Your treatment of sloughing bubo must be the
sloughing chancre; entirely devoid of mercury.

Exhibit ammonia with opium, and a generous diet, so as to
the constitution, without exciting any febrile action. The lo
must principally consist in the application of the nitric acid wa

3. It sometimes happens when the gland suppurat
sloughing process is going on, that secondary sympto

It is not right to give mercury in consequence of the
secondary symptoms, but you should order the compound deco
parilla. When the sloughing process is stopped, and the wo
not give mercury unless the secondary symptoms remain or ret

4. If after the healing of a suppurating bubo, a
remain in the groin, you must direct your attention

This may often be done by an injection of about two
oxymuriate of mercury to an ounce of water, or the undilute
lyttæ, which will generally bring on adhesive inflammation. I
not succeed, you must depend on the use of a seton, or layi
open, but this latter mode is very rarely adopted.

5. It occasionally occurs that a gland shall projec
after ulceration, so as to require surgical means for re

When a case like this occurs, when the gland is insulated, a
the surrounding surface, you get rid of it by means of small
of bread and oxymuriate of mercury, which are pointed at t
these are inserted into the gland, and allowed to remain ther
hours. This generally brings on a little inflammation, the
gland, and its separation from the surrounding part. Sulph
is sometimes used.

6. After a bubo has suppurated and ulcerated,
then assumes the character of what is called a *phaged*

edges of the sore are thin, rugged, loose, and irregular, ing to a sloughing state of the cellular membrane beneath it.

In these sores, there is an increased number of blood-vessels, over which skin hangs loosely, and the ragged edges of the wound are owing to a ant of action in the part, the blood being retained in it on account of there t being sufficient freedom to carry it into the system.

7. The phagedenic bubo arises from the cellular tissue, and is difficult to give life to it, because it becomes considerably cavated, and the skin hangs loosely over it.

The best treatment you can adopt, is a saturated solution of the nitrate silver; dossils of lint, wetted with this, should be daily applied to the face and edges of the wound, and the yellow wash should also be used. -silk should be put over the wound, to prevent it getting dry; for, if it omes dry, there is great danger of the gangrene spreading. You should e bark and ammonia, in combination with opium, and do all that you to restore the secretions, for this ought to be the first principle of your atment.

SYPHILITIC AFFECTIONS.

1. The venereal poison, when it passes the absorbent glands the groin, goes into the system, but in its course, affects no her glands than these; it is carried through the thoracic duct the blood, and when in the blood, it appears to affect but three rts of the body.

2. The three parts of the body capable of being acted upon the absorption of venereal virus into the system, are, the ucous membrane of the nose and throat, the skin or surface of e body, and the bones with their periosteal covering.

These three are the only parts liable to the syphilitic action after virus has entered the blood; and, with respect to the organs essential to these are not capable of having a syphilitic action excited in them; in those parts of the body subjected to the influence of external c is the syphilitic action observed; the internal organs are entirely fre it; the brain, the viscera of the abdomen, and chest, are never a by it; even the mucous membrane of the interior of the body is not a by it.

SYPHILITIC DISEASES OF THE MOUTH AND THR

1. When the syphilitic action is set up in the mouth, the mucous membrane of the floor of the nose, or the the mouth, becomes red and inflamed; a pimple forms on ulcerates; the bony palate is laid bare, and exfoliates.

When the bony palate exfoliates, a communication is set up thro mouth and nose, fluids return through it, and the voice become there is also a most truly offensive discharge. The tonsil glands affected with sores, which have exactly the character of chancre, rugged edges, a yellow surface, and a livid colour in the surroundi a sense of dryness is felt in the throat, which spreads up the eustachi to the ear.

2. When the venereal virus attacks the mouth and th proceeds to the pharynx, and not unfrequently ulcerate pletely through it, and the cellular membrane behind, vertebra; but the worst effects of all, are produced by its on the larynx, and unless immediate attention is paid t will destroy life in a very short period.

Attending this last affection, there is also loss of the voice, so t are obliged to put your ear to the patient's mouth, he speaks in whisper. This effect of the venereal disease more frequently dest than any other.

3. *Treatment:*—The treatment required in syphilitic sore roat, must depend on the parts under its influence, and the ature of attending circumstances.

It will be necessary to make use of mercury, if the part is not too irrita-le, and the sore has no other character than in a healthy person, and does ot affect the mouth more than is generally done when syphilis appears in y other part of the body. Here, you must endeavour to prevent the sease making those dreadful ravages on the soft palate and superior maxil-ry bone which require artificial means to close it.

4. Mercurial fomentations are found the most efficient local eans for sores of the palate; but, if the roof of the mouth elf becomes affected, a little diluted muriatic acid will assist foliation, and prevent the aperture from being very large.

When an aperture has been produced in the roof of the mouth, I put a ece of lint into the opening, and the consequence is, that the person does speak through his nose so much, and is not exposed to the observations his friends. As soon as the exfoliation has taken place, it will be right introduce some extraneous substance to fill up the aperture; and the best trument I know, is one contrived by Mr. Weiss, of the Strand.

5. When venereal sores exist on the tonsils, local means are t necessary, for a considerable portion of the tonsils may be t without producing any bad effects; constitutional remedies ne are generally employed.

With respect to my own treatment, I am always disposed to assist by local ans, the healing of syphilitic sores, wherever they occur.

6. When there is syphilitic disease of the soft palate, nothing n be worn, because any instrument, unless kept near the bone, uld excite inflammation.

. Roux, of La Charité, at Paris, in a case of division of the soft palate, formed an operation, for the purpose of closing the aperture, on the ne principle as the operation for hare-lip.

7. With respect to venereal affections of the laryn must act immediately on the system by the use of mercur

In my own practice, I use the oxymurias hydrargyri, because quickest in its operation. I also make use of mercurial fumigatio give the blue pill and opium, but I prefer the oxymuriate, on acco speedy effect.

SYPHILIS AFFECTING THE NOSE.

1. The mucous membrane of the nose is liable to b by this disease as well as the mucous membrane of the

Ulceration in this part very speedily affects the bones, which exfoliate, and the patient will be in danger of loosing a considera of his nose.

2. The first circumstance which indicates the existen disease, is an incrustation forming in the nose, which, removed by the hand, gives rise to a discharge of blo with purulent matter.

In two or three days similar incrustations are formed, and u ulceration takes place, which frequently lays bare the bone, sions the process of exfoliation. The bones very often separ foliation, long after the syphilitic action has ceased.

3. *Treatment:*—The treatment of syphilis in the similar to the treatment of it in other parts of the bo constitutional treatment is precisely the same; but in to the constitutional treatment, local applications should ployed.

Fumigating the part is attended with some advantage; injecting also sometimes found to be beneficial. Lotions of diluted nitric o id, may be used with a view of healing the sores, and assisting the pro-ss of exfoliation. Fumigations are useful in clearing away the accumulated crustations. Steaming the nose with hot water, assists in separating incrustations, and affords considerable relief to the patient.

We have now gone through the ordinary treatment of this disease; and the bones of the nose have not become affected, there will be but little ouble in effecting a cure.

4. Sometimes you will meet with cases in which very con-derable difficulties will be encountered, and in which, the most orrible deformities will frequently be the result. In general, u are to consider these deformities, not of syphilis itself, but the improper mercurial treatment.

The disease usually occurs in the following manner:—A patient undergoes mercurial treatment, and the sores appear to be cured; but when the ercury has been left off for a time, and the person has returned to his ordi-ry employments, he finds the discharge again appearing in the nose, and, it becomes offensive, applies to a medical man. Under such circum-ances, it is frequently supposed that he has undergone a treatment which insufficient for the cure of syphilis, the disease is not yet sufficiently bdued, and he is put under a second course of mercury, and from this roneous opinion proceeds the disease in question. The mercury, instead assisting the exfoliation which is going on, adds to the inflammation, and oduces other and more extensive exfoliations.

5. To prevent the great deformity which will arise in such ses, if an opening be formed through the skin, in the upper rt of the nose, a probe should be introduced, to feel for the ose ossa nasi, which should be removed by a pair of forceps.

In these cases, the nose will be somewhat altered; there will be still me deformity, but not to that horrible extent which ensues, if the skin is lowed to give way in the upper part of the nose. Evaporating lotions ould be employed, to prevent ulceration taking place through the skin.

SYPHILITIC ERUPTIONS.

1. Syphilitic eruptions are the mildest of the secondary symptoms of the venereal disease, and in general admit of an easy cure.

2. The common character of syphilitic eruptions, is, that they are of a copper colour, rising a little above the surface of the skin, and, if they go on to ulceration, form thick incrustations.

Syphilitic eruptions are attended with very little pain; an itching, rather than a painful sensation, is felt in the part, which increases a little in the evening.

3. There is a greater variety in the character of venereal eruptions than in any other symptoms of the complaint; not only in appearance, but also in size.

In some you will find the eruptions of considerable magnitude, appearing as if a portion of copper skin was laid down upon the surface, but unattended with ulceration. In others, you will observe deep ulcerations, with a ragged edge, in a third, there will be scaly eruptions, covering very large surfaces in various parts of the body.

4. With respect to the parts in which venereal eruptions most frequently appear in the first instance, they are the head, face, and roots of the hair. Incrustations form about the hair of the head, and scabs appear on the forehead, breast, the palms of the hands, and sometimes on the soles of the feet.

The palms of the hands are more frequently attacked with venereal eruptions than other parts of the body, because there is more vigour of circulation in these parts; the parts where the circulation is more feeble, are less liable to be attacked.

The treatment of venereal eruptions is very simple; you t pursue the same constitutional remedies as have been ady advised.

ve ten grains of the blue pill united with opium, at night, and five in the ing. Five grains of Plummer's pill at night, and half a pint of the ound decoction of sarsaparilla daily, is also recommended. The sar-rilla will relieve the symptoms for a time, but the disease will re-appear, you are never sure that the patient will not return with syphilitic toms. These medicines must be continued for about two months; for ugh the eruption will yield in a short time, unless you continue the cine till the syphilitic action is destroyed, the disease will return.

Venereal eruptions shew an irritable disposition, as well ther symptoms of the disease, from which the parts will be in ger of sloughing.

henever this irritable disposition appears, suspend the use of mercury, give the compound decoction of sarsaparilla alone, in considerable tities. It will be better not to unite the decoction with mercury in form: if you add any thing, let it be opium and nitric acid. The m (if it does not disagree with the stomach) has the power of lessening bility, and the nitric acid has sometimes a specific action on sores is kind.

. The local treatment of eruptions will also aid considerably elieving the patient of his troublesome complaint.

he best application is mercurial ointment with opium; an ounce of the ment, with a drachm of the extract of opium. This, and the nitric acid n, diminish irritability better than any other applications. The epi-a composed of the liquor plumbi subacetatis, with the mel rosæ and tura opii, is often found to be useful. Carrot poultices, the solution of nitrate of silver, and a great variety of applications are employed with same view.

SYPHILITIC DISEASES OF THE PERIOSTEUM AND BONES.

8. The third effect of the syphilitic poison, is on the periosteum, and on the bones. It first attacks the periosteum, and the bones subsequently become affected. Those bones which are most external, or have the least to cover them, are more subject to syphilitic disease than the deeper seated ones.

The symptoms which attend are as follow:—Some weeks after the chancre has healed, the patient experiences in the evening a sensation of pain in the bone, which afterwards becomes the seat of the node. The pain does not immediately produce a swelling; but in the course of a few days, a painful swelling appears in the evening, which disappears again on the following morning, and leaves no pain. At this time the periosteum only is affected by inflammation; in a short time, a deposit takes place between it and the surface of the bone; this deposit is, in the first instance, only a serous fluid, but a cartilaginous substance is soon secreted, which is gradually converted into bone, and technically called a *node*.

9. *Treatment*:—The treatment of this disease is not different from that which is necessary for the other symptoms of syphilis.

Give the blue pill united with opium, and simply apply evaporating lotions, which will certainly assist in getting rid of inflammation. When the inflammation has ceased, if there is any enlargement of the bone, a stimulating plaster, as the emplastrum ammoniaci cum hydrargyro, should be used.

10. Though the treatment of *nodes*, when attended to early, is very simple, cases sometimes occur in which considerable difficulty arises.

You will sometimes find a considerable quantity of serous fluid fluctuating between the periosteum and bone, unaccompanied with inflammation and redness of the skin. This may be removed by adding a little to the influence of the mercury. When the fluctuation, however, is accompanied with an appearance of redness in the skin, and much pain in the part, indicating the

nce of matter, it will be impossible to produce absorption by any means,
he sooner an incision is made down to the bone, the better. The exfo-
n which will afterwards take place, will be proportional to the extent
rface laid bare; and if you delay making the opening till the extent of
e affected is very considerable, you will only be adding to the evil.

. The flat bones are sometimes the subject of syphilitic
n, characterized by the same symptoms as before related.
; which is more commonly affected than any other is the os
tis.

ometimes happens when this disease attacks the flat bones, that it is
ded with a very considerable tumour and fluctuation. No incision
d be made under such circumstances. Now and then, indeed, the sup-
ive process takes place, and a most serious disease is the result. When
kin is inflamed, and matter is formed beneath, it will be right to dis-
e it.

. It very often happens in venereal affections of the cranium,
matter forms on the surface of the bone, and the suppurative
ess also takes place between the dura mater, and the internal
of the skull.

e treatment you are to adopt in these cases, is to take out a portion of
xfoliating bone; and to give immediate relief to the brain, by removing
ressure produced by the matter formed between the dura mater and

. Whenever you are called to a case, in which exfoliation
e bone of the skull is accompanied with symptoms of pres-
on the brain, you may infer that matter has formed between
dura mater and bone, and it will be right to apply the tre-
e.

is observation applies not only to cases of syphilitic disease, but to all
of exfoliation of the bones of the skull, accompanied with coma.

. We have now gone through the consequences of impure venereal intercourse; and as the student, by this time, has a tolerable knowledge of the results of gonorrhœa and syphilis, we will now pass on to some general remarks of the true character of the latter.

GENERAL REMARKS ON SYPHILIS.

1. Syphilis, as we have before observed, is a disease communicated by a peculiar morbid poison; the symptoms of which complaint are divided into ***primary*** and ***secondary***.

2. Chancre and bubo are the primary symptoms; sore throat, eruptions, disease of the nose, and nodes, the secondary; and secondary symptoms are the consequences of the absorption of the venereal poison into the system, and its circulation through the blood.

The time at which secondary symptoms usually appear, is from eight to sixteen weeks; sometimes, however, they are protracted, in consequence of the system labouring or suffering under the irritation of another disease, as diarrhœa for example.

3. According to Mr. Hunter, the venereal poison is commonly in the form of pus or some other secretion.

In most cases it excites an inflammation, which is attended with a specific mode of action, different from all other actions attending inflammation, and accounting for the specific quality of the matter.

4. The formation of matter, though a general, is not a constant attendant on this disease.

inflammation produced by the venereal poison, sometimes, does not ate in suppuration.

Venereal poison is very irregular in its effects; and hence, bly, is one cause of a great deal of uncertainty yet prevailing its distinguishing characters.

, as Mr. Hunter mentions, two men sometimes have connexion with ne woman, both catch the disease; but one may have very severe, the xceedingly mild, symptoms.

Mr. Hunter gave it as his opinion, that children could not ected by syphilis when *in utero*; but, from my own obser-s, they undoubtedly can be, and are.

hin twenty-four hours after their entrance into the world, such children he palms of their hands, the soles of their feet, and the nates, covered opper-coloured eruptions; and the nails at the same time, generally, to peel off, and, if care is not taken, the little patient will sink under ects of the disease.

hese cases, you give the mother a quantity of mercury, the influence ch is communicated to the child, through the medium of the milk, becomes cured of the syphilitic disease.

A woman during pregnancy cannot be cured of the venereal se; you may give mercury, and cause the disappearance of rimary symptoms, but after delivery, the secondary effects ery soon manifested in different parts of the body.

To the question, does much inflammation usually attend llis? no direct answer can be given, for the degree of in-mation which attends it, is proportioned to the health or ble state of the patient.

a healthy person, the venereal disease is slow in its progress, and but inflammation accompanies it; on the other hand, in the irritable n, it is rapid in its progress, and accompanied by considerable inflam-ry action; therefore, the differences which characterize the syphilitic

disease in various persons, do not arise from any peculiarity
itself, but from the peculiar condition of the person on whom it

9. Mr. Hunter considered syphilis a local diseas
evening exacerbations formerly mentioned, fever, s
and copper-coloured eruptions, fully prove that ther
stitutional effect produced by syphilis.

10. Whether the matter of a secondary venereal
fectious or not, I cannot possibly say, but if what I
be true, it certainly is capable of propagating the dise

11. The matter of bubo, as far as experiments h
not infectious; and for my own part, I think there
little difference between the matter of bubo and tha
mon abscess.

12. Some persons imagine gonorrhœa and syphil
same disease; but the experiments which have bee
to illustrate this point, decidedly prove the two dis
different in their true characters.

13. To the question, is chancre curable without
mercury? I should reply, that mercury is not always

Some chancres will certainly not heal without mercury; an
especially the case, when they are deep seated, or of long stan
the other hand, when the sore is slight, superficial, and recent,
posed of brandy and water, or wine and water, will often c
heal without any other application.

14. The modus operandi of mercury has been supp
that of exciting in the nervous system, a general fe
overcomes and subdues the syphilitic action; but it is

mention to a nicety the peculiar action of this specific for hilis.

hat mercury cures syphilis is well known; but though the disease may ppear quickly after using it, remember that it is not cured; you ought to tinue it three weeks for a chancre; a month for chancre and bubo; and ases of secondary symptoms, the patient cannot be safe, unless you tinue it for five or six weeks. If it disagrees with the patient, it should er be omitted for a time, or united with other medicines.

5. Is any other medicine but mercury, capable of curing hilis? This is a question which my own practice enables me answer, and I strenuously and conscientiously advise you ays to give mercury both for primary and secondary symp- ms, and not trust to any other remedy.

he only permanent or successful mode of treating syphilis, is to excite a ht (not violent) mercurial action; and continuing the mercury for the iods just alluded to: do not produce salivation, for it would rather prove rious than beneficial. The compound decoction of sarsaparilla, which is highly spoken of by some, may be used as an auxiliary, but cannot be ed on as a specific.

POLYPI OF THE RECTUM.

l. Most mucous surfaces produce polypi, and the rectum ong others. Polypi of the rectum generally occur in children, l very rarely in adults.

he way I would recommend you to remove them, is to draw them down, s to bring into view the part of the rectum from which they spring, and en this part is brought into view, to put a ligature round them, and ove the part below the ligature with a pair of scissors.

NASAL POLYPI.

1. There are four different species of polypi of the nose; the first and most common, the gelatinous; the hydatid; the carcinomatous; and the fungoid.

2. *Gelatinous Nasal Polypi:*—Polypi of this description grow from a narrow peduncle, are composed of a very soft substance, resembling jelly, (hence their name,) and are very slightly vascular.

A polypus of this kind, is yellow and transparent, very thinly streaked with vessels, which are never sufficient to give it a red appearance. It hangs from the schneiderean membrane by a small peduncle, therefore loose in the nose, and if you stand opposite the patient, and he draws in and forces out his breath through the nostrils, you will then be able to see it advance, and again retreat, (if not too large) to the posterior nares. It generally has its origin in the middle chamber of the nose, between the superior and inferior turbinated bones.

3. Polypi of the nose, of the gelatinous description, often acquire a very considerable magnitude.

When this is the case, they extend into the posterior nares, and often hang over the edge of the velum pendulum palati, so that you can frequently see them at the back of the mouth; and if they are not quite so large as to allow of this, they may be distinctly felt on passing back the finger.

4. The remedy for these polypi, is extraction by means of forceps; and you must bear in mind, that unless the points of the forceps are applied near their bases, you cannot expect to be successful in extracting every part of them; consequently, they will again form, and the operation be again required.

The forceps which you should employ, are long, and have small points

insides of which are made rough to prevent their slipping from the
duncle, and thereby losing their hold. The manner of using the forceps
this: pass up a probe in a direction between the superior and inferior
binated bones, and feel for, and ascertain the precise situation of the
duncle. Having satisfied yourself of the situation of the peduncle, with
probe, then let it remain as a director for the forceps, and having carried
points of the forceps to the peduncle, thus guided by the probe, seize
peduncle and tear it off by a *sudden jerk* of the forceps: by adopting
mode, polypi may be effectually removed.

. If the person should be very young, and the nose small,
may remove the polypus with a pair of forceps similar to such
are contained in our common pocket instrument cases; if,
vever, the polypus should grow far back, then you will succeed
t with the forceps just named.

metimes I take away polypi by merely using a pair of probe-pointed
ors. After cutting through the peduncle, if you desire the patient to
his nose, the air will force it out of the nostril; but I should tell you,
, when thus removed, they are more likely to return than when extracted
forceps, because you do not here take away the pituitary membrane,
this is the source from whence these polypi arise.

. When the polypi extend into the posterior nares, and are
large, so that they can not only be felt, but frequently seen,
erent forceps and a different mode of operation is necessary
their removal.

he forceps for such a case should be exceedingly curved. They should
assed to the back of the mouth, then their points or blades are to be
ied up the posterior nares, when, having satisfied yourself (in the
ner lately directed) that you have hold of the peduncle, you are to break
by moving the forceps in a direction *downwards* and *backwards*.
nother way, when the polypus is large, and when the peduncle grows
the side of the antrum, is to divide it by means of a pair of curved
ors, and then with your finger, hook down the polypus at the back of the
th, from over the velum pendulum palati: in this way it falls into the
at, and produces a sensation of choaking; retching is the consequence,
the polypus will be thrown upon the floor before you.

7. If after the removal of a gelatinous nasal polypus, you think any portion remains, you should, by means of a probe, pass up a piece of lint to the spot, to prevent any annoyance from hemorrhage.

The lint, previous to its introduction, may be dipped in a solution of alum; indeed, where patients have objected to have this polypus removed by the forceps or scissors, it has been recommended to use injections of alum, and of the oxymuriate of mercury.

8. *Hydatid Nasal Polypi:*—These are formed by a collection of hydatids, and have the appearance of bags or bladders of water; with these there is generally a copious serous discharge. They are usually found in young persons.

The peduncle of this species resembles the cord formed from the placenta; it is composed of thin fibres or films, which form the covering of the polypus, and these converge to form and complete the peduncle.

9. The best plan of treatment you can adopt for these cases, is, daily to touch the polypus with the muriate of antimony.

This should be carefully done by means of a camel-hair pencil, for a very few times will be sufficient. It acts chemically, and quickly destroys the tumour.

10. *Carcinomatous Nasal Polypi:* — These have similar symptoms and appearances to scirrhous tumours in other parts of the body, are painful at intervals, ulcerate, and during this stage occasionally bleed. They are commonly met with in old persons.

They are usually attended with severe pain across the forehead, in the situation of the frontal sinuses; the passage of the air through the nose becomes obstructed from the size of the swelling; the tumour also presses upon, and occasionally obliterates the lachrymal sac, preventing the natural course of the tears, thus giving rise to the inconvenience and symptoms of *fistula lachrymalis.*

1. In this complaint all that you can do will only amount to nquillizing nature. It is a malignant affection, and will ulti-
tely destroy life.

s regards internal remedies, you may give opium in such quantities as l have the effect of lessening the dreadful pain. Belladonna and opium, conium, may be applied to the part; and if the inflammation should be re, you may apply leeches in the vicinity of the nose, together with orating lotions.

!. *Fungoid Nasal Polypi*:—These are characterized by the ral symptoms of fungoid disease in other parts; and their nsive adhesions preclude the success of their removal, either ie forceps, with scissors, or by ligature.

either case, the operation will be useless, and, what is still worse, will jury, by exciting irritation, whereby the disease becomes aggravated. ese cases, I shall, in future, try what effect will be produced by the ate of antimony.

ENLARGED PITUITARY MEMBRANE.

. This complaint consists of red projections from the nos- , which are merely an enlargement of the pituitary mem- ie, and not unfrequently occurs with young children, and as ears some resemblance to polypi of the nose, you must be n your guard.

assured when you observe these red projections in the nostrils of young ren, that they are not polypi; the disease is merely an enlargement or ening of the pituitary membrane.

In these cases, there is no necessity for any operation: all you have to do is to touch the projecting parts, by means small bougie formed of nitrate of silver: from this applic they will in a short time turn white, and very soon dis altogether.

ENLARGEMENT OF THE TONSILS.

1. Enlarged tonsils are generally the result of one diseases common to children, as the small-pox or measle the inflammation which produces them, is of the sc kind.

Children will be brought to you with swellings in their throats, a be stated that they have great difficulty of breathing, sleep w mouths widely distended, the skin, at the same time, being coven profuse perspiration. Upon feeling the throat, looking into the passing back the finger, it will be readily ascertained that one or b glands are enlarged. Sometimes the enlarged part is attached to by a distinct small peduncle; at other times, the base of the swel considerable size.

2. The treatment you are to pursue, should be both tutional and local.

3. *Constitutional Treatment:*—To prevent the gr these enlargements, and their formation altogether, medicine that can be given is the oxymuriate of mercur bined with the tinctures of bark and rhubarb.

A very good formula is one grain of mercury, in an ounce each o of bark, and tincture of rhubarb. A teaspoonful to be taken i *white* wine, twice or three times a day, according to the age or e of the patient. By this medicine you will improve the appetite, ngthen the stomach and bowels, and gradually restore the vigour of the stitution.

. *Local Treatment*:—The application of the nitrate of silver l often succeed in getting rid of these tumours, as also the hate of copper, and even alum; but the first is the remedy rally selected.

order to apply it, you are to press down the tongue with one finger, holding the nitrate of silver in its ivory case, between the finger and b of the other hand, gently apply it to the surface of the swelling. application may be repeated, if necessary: where the caustic is applied, art will soon become white, and scale off. A succession of these, pro- l by a succession of applications, will often effect a cure.

When the tonsils are too large to admit of cure, by the s already described, or when they resist the proposed me- s, you must remove them *by ligature.*

is easily applied, and may be done by first passing it through the eye probe, (previously curved for the purpose) then carrying it over the l, bringing it out below, and tie it in front of the diseased gland. If finger should not be sufficiently long to make the knot, you should then he *tonsil iron*, an instrument well adapted for the purpose, and would uch better for performing the operation altogether, than either the or finger.

the tumour is not of that form which will admit of a ligature being put the way just mentioned, you must then pass the ligature through the e of the swelling, by means of a needle, and tie it above and below; ligature must, of necessity, be double. In this way, you will succeed, ffectually as with the other mode, in producing a separation of the rged part.

HARE-LIP OR LABIA LEPORINA.

l. Hare-lip is a fissure, or perpendicular division, of one or both lips; though occasionally, the fissure is more or less oblique.

In general, the division is just below the septum of the nose; but sometimes it corresponds to one of the nostrils. The two portions of the lip are generally moveable, and not adherent to the alveolary process; in less common cases, they are closely attached to the forepart of the jaw.

2. Hare-lip is sometimes *single*, that is, the fissure being only on one side; sometimes *double*, a fissure being then on each side; and occasionally attended with a want of the teeth in the upper jaw; also a loss of the velum pendulum palati and uvula.

Sometimes in the double hare-lip, the only thing between the fissures is a small projection of cartilaginous substance, attached to the tip of the nose; the soft palate, in these cases, is generally wanting, and the turbinated bone exposed.

3. In the operation for the removal of hare-lip, the simple principle is union by adhesion or first intention. The nature of the operation must obviously depend upon its being either a single or double hare lip.

Operation for Single Hare-lip:—Pare off the edge of the divided lip on each side, by means of a small bistoury: in executing this step of the operation, take care that you cut off enough, for immediately at the margin the parts are callous, and will not readily unite. Having pared off a sufficient quantity of both edges, all that remains is to apply the ligatures, of which two are enough. Introduce one ligature immediately at the edge of the lip, that is, at the lowest part of the divided portions where the red part or line of the lip begins, and the other ligature is to be introduced exactly midway between the first and the extent of the wound towards the nose.

As your object should be to cause the wound to unite as soon as possible, any thing calculated to retard that effect should be studiously avoided; and, as wax is known to have a tendency to induce suppuration and ulceration, it should not be rubbed over the ligatures. Again, the ligatures should *not* be too delicate, that is, not too thin, if they are, the lip might be cut through by them.

4. Having gone through the operation for single hare-lip, we ill next speak of the operation for the double hare-lip, and terwards allude to other circumstances connected with them.

Operation for Double Hare-lip:—It has been recommended to cut away it portion of skin which exists between the two fissures. That, however, ot the best plan; indeed, it is a very bad one. Always allow that por- of skin to remain, you will find it a great support, and of considerable ity in rendering the operation perfect. Therefore you are to pare the es of this portion of skin in the same manner as you were directed in first operation. But you must not, when a hare-lip is double, operate both sides the same day. You must let one side get well, and then you operate on the other.

. When the operation for hare lip has been performed, and edges of the lip have been brought together, your best plan o let the blood remain over the wound; let it clot there, and sponge it off.

his will be the best bond of union, and the adhesions which take place er this, seldom give way. Poultices must never be used.

. In performing these operations, there will sometimes be siderable bleeding from the superior labial artery.

iere will not be any necessity for applying a distinct ligature to the el, because you can easily tie the ligature at the angles of the lip in such anner as shall compress the artery and stop the bleeding. A separate ure would be highly improper.

. As regards the time of removing the ligatures, you must be erned by the state in which you find the parts.

the fourth day after the operation, the middle ligature may be re- d, and on the fifth or sixth, the other. If adhesion has not taken place, must not take away the ligatures on the fourth or fifth day, but you ld wait a short time longer.

With respect to the age at which you should operate, I would advise you never to do so on very young infants, but defer it until the completion of dentition.

Children, when so very young, are not competent to undergo operation, and you ought not to perform them for hare-lip, unless they have reached the age of *two years*. After that period they possess some degree of strength, and are much less disposed to irritation and convulsions.

CANCER OF THE LIP.

1. Cancer, occurring in the lip, generally commences with a small crack, which becomes exquisitely painful, and, upon examination, is found to be formed in a small, hard, deep-seated tumour.

As the disease advances, the pain becomes more intense, and is pungent and lancinating; ulceration ensues, and, if its progress is not timely suspended, the life of the patient is endangered by an extension of the disease, first to the glands of the neck, and afterwards to other parts of the body.

2. Cancer of the lip is of a true scirrhous nature, even at the beginning; it is hard, has a bleeding surface, everted edges; and other symptoms indicative of the carcinomatous character. It chiefly affects the under lip.

The disease generally arises from the use of a pipe:—The adhesive nature of the clay of which the pipe is made, causes it to adhere to the lip: at length the cuticle becomes torn off, and the continued irritation frets the sore into a true cancerous disease.

3. An operation for the complete removal of the disease, is the patient's only real hope of succour. Oxyde of arsenic has been employed; but it very soon produces a rapid disease of the glands, therefore ought to be abandoned.

removing this disease with the knife, you should make an opening in lip similar to what has been advised in single hare-lip; that is, it should triangular portion of the lip, including the disease, entirely cut out; integuments can be easily approximated, and kept in their proper ition by as many ligatures as the size of the wound shall seem to require: rally speaking, two will be found quite sufficient. The hemorrhage the inferior labial artery may be stopped in the same manner as was mmended in the hare-lip operation.

TIC DOULOUREUX.

This is a most dreadfully painful affection of the nerves of face, but of what nature it is difficult to say.

e pain is in general like the pain of electricity—patients will exclaim, I had a shock at that moment." It produces a kind of flittering gh the nerves; its motions are like summer lightning, and the pain ot be compared to any thing more appropriate than the horrid sensations ed by electric shocks.

This complaint usually occurs in the nerves of the face, e especially, in the filaments of that branch of the fifth pair, h comes out of the infra-orbitary foramen.

metimes it attacks other nerves. It is not continual, but occurs in vio- paroxysms, which vary in duration in different instances.

Of the nature of tic douloureux, nothing, bearing any thing conviction, can be named.

he nerves in this disease are not in an inflamed state, most certainly, for er the most horrid suffering they are found of a natural colour; they are increased, but, on the contrary, are found to be rather diminished. in, I think the disease to be one of diminished action rather than of in- sed; and it has been found that stimulating, exciting medicines, are e beneficial than those of an opposite character.

4. Then, as to the causes of this complaint, we are almost as entirely ignorant.

There are a few instances recorded, which appear to be the consequence of external violence, wounds, contusions, and so on. Mr. Abernethy is decidedly of opinion that tic douloureux is completely constitutional, arising from general irritability of the nervous system.

5. *Treatment:*—The best medical treatment you can adopt for cases of tic-douloureux, is probably, the administration of carbonate of iron; or, if this remedy fails, the use of other tonic and sedative medicines.

Stimulating embrocations, blisters, caustic, issues, fomentations, leeches, friction with mercurial ointment, electricity, opium in large doses, the arsenical solution, and a variety of antispasmodics, are the principal means which have been tried; but, for the most part, they only afford partial and temporary relief. Opium with sulphuric ether; extract of hyoscyamus, valerian, and peroxide of zinc; belladonna; sulphate of quinine; arsenious acid; and extract of stramonium; have also been recommended, and cases recorded in which they have, severally, been useful.

6. If no impression can be made on the complaint by the use of medicines, will the division of the nerve effect a cure?

The division of the diseased branch will at least generally succeed in keeping off the pain for the space of three or four months; about which time it appears that the nerve re-unites, or that its branches anastomose with each other. In fact, it must be confessed, that the operation has even failed in affording relief, much less of effecting a permanent cure.

7. As operations will afford even a temporary relief, you may probably be called upon to divide the trunk of the affected nerve, and even of dissecting out a portion of it, so as to give a chance of entirely cutting off the complaint.

But, before having recourse to an operation, you should be sure that the particular nerve, which you are about to expose and divide, is really the principal seat of the disease; for, when all the nerves of the face generally are affected, or when the branches of the portio dura are especially concerned, there is little hope of success.

nerves which most frequently require the operation, b-orbitar, the supra-orbitar, and the sub-mental

Nerve:—If it should be deemed requisite to divide the sub- it should be done a quarter of an inch below the orbit: the ut through the foramen, half an inch below, so that you are to ay between the foramen and the edge of the orbit; if you divide this, you will leave some branches which will still continue the proper mode to be adopted for dividing it, is to introduce a bistoury at the distance from the orbit already stated, and oint of the instrument close upon the bone, you hook up the dge, then press upon the skin over the edge with your finger, me time withdraw the knife through the opening by which it is way, as you take out the knife, the nerve will be divided. k the patient if he feels a numbness of the upper lip, and if he ur operation will be incomplete.

tar Nerve:—When necessary, the supra-orbitar branch is to a similar manner, by introducing the knife under the integu- superciliary ridge, and cutting through the nerve immediately from the supra-orbitar foramen, by carrying the point of the nose outwards.

l Nerve:—When the sub-mental nerve requires division, you ke any incision through the integuments, but may perform the placing the knife within the mouth, and directing its point the mental foramen, where the nerve passes out, and, by nife along the bone at that part, the nerve is sure to be divided. this operation, you may direct your knife by the bicuspidati erior maxillary foramen being just below them.

SCROFULA.

ula is a peculiar disease, of an inflammatory charac- in debilitated constitutions of a peculiar habit.

d that scrofulous diseases are inflammatory, that they undergo all the different processes of inflammation, the adhesive and suppurative processes, ulceration, and gangrene; but gangrene less frequently than any of the others.

2. The inflammation attending scrofula, differs materially from common chronic inflammation; connected with the latter, there is certain debility, but that debility is the result of intemperance, or change of constitution; whereas in scrofulous inflammation, the weakness exists from birth, and the four usual terminations are imperfectly performed.

The *adhesive matter* secreted in scrofulous affections, instead of being firm, consists of a curd-like matter, easily broken, and very soft; and this is owing to the blood-vessels not entering it. The *suppuration* is not of the common kind, it contains curd-like matter, and is not truly purulent; *ulceration* is slow in its progress; and *granulations* are unequal and slow in forming.

3. The age at which scrofula manifests itself, is during growth; it is extremely rare for it to occur after.

In scrofulous children you will generally find they are characterised by the following symptoms: thin delicate skin; rosy countenance; light coloured and fine hair; long eye-lashes; dilated pupils; clubbed fingers; and a thick upper lip. Again, those who are the subjects of scrofulous diseases, often have follicles on different parts of the body, incrustated with inspissated matter.

4. Most parts of the body are subject to this disease; but some parts do not appear to be so much so, or to be the least affected by it.

The absorbent glands and joints are most frequently attacked; the lungs and the brain not unfrequently. The secreting glands are very rarely affected by it, at least the liver and kidneys, for the testicles and breasts are exceptions.

5. Scrofula differs in different constitutions; it may be of an

irritable kind, but more frequently of the first than

the irritable character is a dreadful complaint, for joint after rious parts of the body become inflamed, whilst in indolent mplaint is sometimes confined to a particular class of parts, and cluded.

ula prevails more extensively in temperate latitudes, hot, or very cold climates.

nore frequent in some parts of Europe than others; and, in it has been known to be most prevalent in the counties of Suffolk re.

will find scrofula considerably influenced by climate, those climates in which the change from cold to heat, moisture, are most frequent; and on this account, land is favourable to the production of scrofulous

d and moist climates giving rise to the occurrence of scrofulous hough it is found that those who live in countries where they to the extremities of heat and cold, are not the subjects of very frequently occurs that children born in warm climates, and brought to this country to be educated, frequently perish

ugh we have proof of some climates predisposing to int, and favouring its production more than others, t striking effects are manifested by the changes of the er scrofula has occurred.

nstance, if a child with scrofulous disease be examined in the has a gland that is inflamed, the complaint will go on, during ill the summer months, when it will be arrested, and the child improved. In this state it will remain till October and d then the child will become worse. From this circumstance er gains or loses credit in the opinion of the parents, according e may first be called upon to administer medical advice.

9. That scrofula is an hereditary disease, appears as clear to me as can be; and they that deny it, cannot have given the subject open and candid investigation.

You may prevent scrofula by care, but that some children are originally predisposed to the disease, there cannot be the least doubt; and in such cases, the education and the habits of youth should be so directed as to ward off a complaint, the effects of which are so frequently fatal.

10. Although scrofula is an hereditary complaint, there is sometimes a singular intermission in its being developed.

Thus, it will occasionally pass over one generation, and appear again in the next, so that the grandfather and grandson (the first and third generations) shall both be scrofulous, while the intermediate one, which holds the more intimate relation of father and son, and connects the two others together, shall be exempted from any development of the disease.

11. Scrofula is not communicable from one person to another.

Neither can it be conveyed into the system by inoculation. The opinion, also, that scrofulous nurses may infect children, seems quite destitute of foundation.

12. *Causes:*—The predisposing cause of scrofula is congenital, or consists in an original fault of constitution. The exciting causes are those which tend to produce, or rather increase that debility; such as fever of a specific kind, as measles, scarlet fever, and small-pox.

With regard to the state of body in scrofulous children, the blood is less firm, the crassamentum loosely formed, and coagulating weakly; the quantity of serum abundant; and the solids are feebly formed.

13. *Treatment:*—The principles on which the treatment of scrofula should be founded are three: First, to make better blood: Secondly, to strengthen the solids: and Thirdly, to give vigorous action to the circulation.

To one or all of these principles, every mode of treatment should be referred. The action of the heart and arteries is naturally feeble, the serum of the blood preponderates, whilst the fibrous portion is deficient in quantity, therefore you must fulfil the indications just alluded to.

14. The two first indications are to be fulfilled by paying particular attention to the diet. Medicine is a secondary consideration, and certainly may be used with advantage as an auxiliary.

In diet, do not allow vegetables; but let meat be taken in small quantities and often, for when the stomach is but little loaded, digestion goes on better. Some slight stimulant, as good beer or wine, should be allowed also. Milk for breakfast I do not approve of. Animal food should be given in larger quantities to persons with scrofulous disease than to those in a state of health.

15. The last indication may be more especially answered by a due attention to exercise and air.

Next in importance to nourishment is exercise. Children with scrofulous affections, or even those predisposed to them, should take a great deal of exercise in the open air; but it should not be carried so as to fatigue the body, for when they feel themselves weary they should rest a little till they recover.

The third circumstance to be attended to is air; without good air, all other means are of no use. Moist and cold weather is the worst. The state of the atmosphere you should choose, is that in which the air is dry and warm, a very bleak wind is not desirable. In the latter part of the spring and autumn, the sea-shore is desirable, but in cold weather it is not.

16. With regard to medicines they may be occasionally given with a view to improve the digestive powers, and to regulate the secretions, but attention to the three points I have just mentioned, is of the chief importance.

Two grains of calomel and eight of rhubarb should be given once a week, or every ten days, in order to restore the secretions. The daily medicines, for a short time, should be something of a tonic nature; as rhubarb with carbonate of iron, or rhubarb with dried subcarbonate of soda and calumba; infusion of chamomile with a few grains of the hydrargyrum cum cretâ, at bedtime, may also be used; or the oxymurias hydrargyri in the proportion of a grain to two ounces of tincture of bark, a teaspoonful of which should be given twice a day in a glass of the chamomile infusion. If the bowels are costive, the tincture of rhubarb should be substituted for the tincture of bark. The liquor potassæ is also used. The medicines which I employ, are the steel, with rhubarb and calomel, or the subcarbonate of soda, with rhubarb and calumba.

17. A great deal of care should be taken of children originally formed weakly; you should excite no feverish action on the one hand, nor do any thing to debilitate on the other.

Such children should be well clothed, and never exposed to changes of temperature. For this purpose they should wear flannel close to the skin; and, in this case, it should be worn also during the night. If the weather be very warm, calico may be substituted for flannel. The great object is to preserve an equal temperature of the skin, and not to produce perspiration, because that would debilitate. It is right to recommend sea-bathing: the bath should be taken about three times a week, at eleven in the morning. The temperature of the bath should be at 94°; the person should remain from sixteen to twenty minutes in it, and walk afterwards.

SCROFULOUS AFFECTIONS.

1. Having given you a general description of scrofula, we shall now proceed to treat of the several parts attacked by this disease.

GLANDS OF THE NECK.

2. Of the different absorbent glands, those of the neck are most frequently affected by scrofulous disease, owing to their being so much exposed, and consequently so much influenced by the changes of the weather and the seasons.

w, when you are consulted in a case of this kind, the symptoms you are as follows:—In the first place, you learn from the child's mother, she at first observed a swelling in the neck, which was small, hard, and painful, nor in any way discoloured, but tender to the touch. Thus the mmatory process does not go on to the rapid destruction of the part, for welling will frequently remain in this state of indolence during weeks, ths, and sometimes years.

. It is a general character with these tumours to remain in ndolent state for a length of time; but owing to accidental umstances, or changes in the weather, or the state of the stitution, the complaint proceeds with greater rapidity.

the complaint occurs in a person of irritable habit, it will advance with dity; if, on the contrary, the person be of an indolent habit, it will be r in its progress.

. When suppuration takes place, there is not much pus proed; its formation is characterized by the common sympas of suppuration, but in a much milder degree than are usually t with.

n these cases, the suppuration is weak and languid, and it is a long time re matter forms. The suppuration is very imperfect, the pus has not the character of purulent secretion; it is composed of a curd-like matter, resembles pus mixed with blood.

hen suppuration is about taking place, the skin at first has a blush of ammation on it, then becomes of a livid or purple hue. It frequently pens when the skin is in this state, a long time elapses before it gives r. When the skin, however, breaks, it generally separates to a considable extent.

. *Treatment:* — In the treatment of enlarged scrofulous nds of the neck, you must be regulated according to circumnces. If the complaint be of recent occurrence, you must at it like a case of common inflammation.

ou will give rhubarb and calomel internally, and recommend evaporating ons as local applications. The best lotion you can use, is the liquor mbi subacetatis, with spirits of wine and water.

6. These glands, however, are apt sometimes, notwithstanding all the means you employ, and all the care that may be taken of the child, to go into the suppurative stages.

In this case, you must give rhubarb and carbonate of soda, twice a day, together with a small quantity of the hydrargyrum cum cretâ, (one grain) three or four times in the twenty-four hours.

7. You must next consider what local treatment to employ if the gland suppurates.

You find there is a disposition to suppurate, evaporating lotions will not succeed, and therefore must be discontinued. The moment there is the slightest blush on the part, and sense of fluctuation, indicating the presence of pus, you should make a small opening with a lancet, as in a common abscess; you should not wait for the skin to assume a livid hue; for then you will never be able to prevent scars.

8. Scars in the neck ought by all means to be avoided, if possible; but the reason why they are so frequently met with, the surgeon waits too often, till the skin has become livid, and then makes a puncture.

In this case, he gains nothing by making an opening into the gland; in fact, if the skin be of a livid colour, I advise you then not to make an opening; apply poultices, and let nature effect the opening, for the scar will not be so great then, as if you were to make it.

9. When you are about opening these tumours, you must remember first, the time at which you are to make the puncture, and the direction in which it is to be made; and, secondly, do not omit to squeeze out all the solid matter that may be within the gland.

The instrument with which I open these abscesses, is a cataract knife, and I make the incision transversely, and just in the direction of the crease of the neck; so that when the wound heals, no scar is to be perceived. When the matter is discharged by puncture, apply your finger to the side of the swelling, and squeeze out all the solid matter that may be contained in the gland. If the sac be not carefully emptied of all the solid matter, this ab-ce will keep up considerable irritation, and prevent the healing of the nd; therefore I wish to press on your attention the necessity of attending is point.

the wound be indolent afterwards, you had better inject into it a solu- of the sulphate of zinc, containing about a scruple of the zinc to a pint ater. Throw a little of this into the wound; it will soon produce healthy ulations, and lessen the discharge if it be copious.

0. With respect to the ulcerative process, there is nothing icular to remark; fomentations, poultices, and the ordinary ns, must be had recourse to.

ur object, however, should be to prevent ulceration by the mode of ment I have laid down, and it is only when it cannot be prevented, that atter means should be employed.

THE MESENTERIC GLANDS.

l. The glands which are affected with scrofulous disease ; in frequency to those of the neck, are the mesenteric glands. oung persons, they are most commonly affected at the age of or eight months.

e complaint is known by the belly being tumid, and from the tenderness essure; attenuation of the skin, voraciousness of appetite; the limbs of hild at the same time wasting. The intestines are equally irregular, sometimes purged, at others costive. In the motions are occasionally ved earthy matter composed of carbonate of lime.

. The causes which produce enlargement of the mesenteric ds, arise from disease of the secreting glands of the intestinal l, such as irritating food, which irritates the mouths of the rbent vessels of the intestines leading to the mesentery.

th respect to the effects of mesenteric diseases, they consist at first in terruption of the process of absorption. The chyle travels through the bents to the mesenteric glands, and, when some of these are enlarged, yle is *interrupted in its course.*

13. *Treatment:*—In this, your main object must be directed to giving highly nutritious food, for absorption being to a great degree prevented, it is important that nothing but what is very nutrient should be given, so that the constitution may be improved and supported.

Animal food is more nutritious than vegetable food, therefore you give it in preference to the last, and prepared so that it may be easily digested. A little arrow-root may be taken, and nutritious broths. When animal food is given, it is desirable to give some wine and water, to stimulate the stomach to secrete the gastric juice, and to excite the action of the intestines. In exciting the intestines, you have a two-fold object in view; stimulating the absorbents, and producing the peristaltic motion of the intestines.

14. In addition to nutritious food, it is well you should employ some tonic and alterative medicines; and external applications to the abdomen.

The best medicine in this disease, with which I am acquainted, is the oxymuriate of mercury, given in small doses, and in combination with the tincture of bark; one grain of the oxymuriate in two ounces of tincture of bark; or should the bowels be costive, in the same quantity of tincture of rhubarb. The hydrargyrum cum cretâ and rhubarb, given so as to produce an aperient effect, are good medicines. The oxymuriate of mercury should be given with no other view than to improve the secretion from the liver and intestines, and thus produce one stool a day. The abdomen should be covered with a stimulating plaster, or frequently rubbed with the hand, in order to produce a gentle action in the part, and excite the absorbents.

15. Dropsy is sometimes connected with this disease. Then paracentesis should be performed, and the patient gets well.

16. Now and then a mesenteric gland suppurates, opens at the navel, and frequently communicates with the intestines, and thus an artificial anus is produced.

In these cases where there is an artificial anus, a large proportion recover. Poultices should be applied over the opening, and when the inflammation is dued, strips of adhesive plaster should be applied so as to bring the edges he wound together, but not until you think all the matter has been dis- rged from the gland.

DISEASES OF THE JOINTS.

7. Scrofulous diseases of joints vary in their character, ac- ding to the stage of the complaint. It generally happens that r a child of a strumous habit has walked a considerable dis- ce, that it complains of pain in the joint; which is accom- ied with stiffness and inability to move it.

nder these circumstances, the parent takes alarm, and I may say that disease can never be too early attended to. The complaint may gene- r be relieved, if it be attended to early, but, if six weeks or two months se before the person applies, he will never recover. A great deal, there- , depends on early treatment.

8. In these affections, there is but little tenderness at first, the swelling is very slight; the same local appearance as in lth, and but trifling constitutional excitement; but when the purative process is about taking place, a different set of local ptoms present themselves.

Then the affection has existed for a length of time, the suppurative pro- will at last be set up, and the joint will assume the character common to mmation of all joints. When the suppurative process commences, a t quantity of pus is secreted, if there be much constitutional irritation. sed, there may be at first, a copious secretion and slight constitutional ngement; for the suppurative process is not attended with the same con- tional effects as in other parts of the body.

.9. We generally let these abscesses open of themselves, as re is little constitutional irritation at first, and the opening not be delayed too long. The abscess generally opens in more ts than one.

When strumous abscesses of joints break, which is a long time from the

20. With respect to the nature of the complai
that it is the result of exercise which has produced
of the internal lining of the joints, and frequently of
membrane; and that this inflammation goes on to
the cartilage, and even of the bone.

21. *Treatment:*—Your first indications of tre
rest of the limb affected, to reduce any inordinat
part, and counter-irritation.

Evaporating lotions of water and spirits of wine, or the
subacetatis dilutus, with spirits of wine and water, should
Rhubarb and the submuriate of mercury, ought to be given
every second day. If the remedies you adopt to suppress t
disease, do not answer, it will be necessary to employ some
irritant. Blisters, tartar emetic ointment, vinegar poultices,
tons, are the various means used for this purpose. If the jo
it will be best not to apply setons or issues close to the joint, b
distance. Blisters may be applied over the joint, but they s
large as to produce considerable irritation; they should be k
unguentum sabinæ.

ıently removed, but in the present day, an affected
care and management, be often made more useful
al one.

**of the knee and ankle, it may be necessary now and then
it ought never to be done, unless the patient is labouring
titutional irritation, which threatens destruction to his life,
dergone such changes that it is not likely to be useful here-**

the fingers and wrist is occasionally performed; that of the

DISEASE OF THE HIP-JOINT.

ous diseases of the hip-joint are more liable to be
scrofulous disease of any other part of the body:
:vails with respect to them.

ɪt circumstance which indicates disease of the hip-
degree of lameness, and pain in the knee. The
joint are impeded; extension is performed with
child's knee is bent, and the heel on the diseased
:sts upon the ground: there is also great difficulty
the flexion of the joint.

**eavour to ascertain whether disease of the hip-joint exists
ld first place the patient on his back, and examine whether
elvis are equal; the pelvis will be lower on the diseased
aced the patient in the recumbent posture, you will then
vards the abdomen, which, if there be disease of the hip-
n considerable pain. In rotating the joint also, much pain
consequence of its stiffened state. You will then turn the
e, and observe whether the nates are lower on one side than
re is generally a difference of an inch or more on the side
are the common symptoms of this disease.**

ɪes are frequently formed in disease of the hip-joint, which take different directions: in general, their course is down the thigh, between the trochanters and the outer surface of the thigh, where they break.

Sometimes they occur in the upper part of the thigh; sometimes they break into the rectum; and in other cases, into the vagina.

27. The cause of this disease, is in general too much exertion for the strength of the patient, which produces inflammation of the synovial surface.

On dissection of these cases, you find in the first place, a quantity of adhesive matter is poured out about the joint; the ligaments are much thickened; the synovial surface is inflamed, and often slightly ulcerated: and, lastly, the bone itself is sometimes absorbed; not only the head of the bone which enters the acetabulum, but the acetabulum itself.

28. *Treatment:*—With respect to the treatment of this disease, you will observe, during the inflammatory stages, the same plan which I have recommended to you in the treatment of scrofulous complaints.

In the first place, the recumbent posture, and as much rest as possible, should be strictly enjoined. If there is much pain, leeches should be applied; evaporating lotions should also be employed in the first few days. If you do not find the inflammation yield in a few days, it will be right to put a large blister over the part, and to keep it open with the unguentum sabinæ, for a considerable time. The surface kept open with the savine ointment, should not exceed the size of a crown piece, as you might otherwise produce too much irritation, and do more harm than good. Issues and setons are more applied here than in any other diseases of the joints. It is better to regulate the degree of irritation, in this way, than to endeavour to produce violent effects.

29. With respect to the treatment of abscesses, it is right in all diseases of joints, and especially in diseases of the hip-joint, to postpone the opening of them as long as you can: unless the abscess is very large, it is best not to open it at all.

The irritation will be very slight if you delay the opening, but if you make ırly, the effect will be just the same as if you were to cut into the joint, it ld excite much irritation in that important part. Give time for nature to orm her task, and to fill the joint itself with adhesive matter, as the ab- ; extends down the limb to a great distance from the joints.

0. When the disease is protracted, it would be cruel and rious to the child to keep it in a state of perfect rest; it, 'efore, should be allowed to use a crutch.

:ercise will prevent the derangement of the general health, and the de- ıion of mind, which arises from long confinement. If the disease has :nued for any length of time, it is not to be expected but that some lame- will remain.

VERTEBRAL DISEASES.

. A disease similar to the disease in the joints, occasionally rs in the spine, sometimes beginning in the vertebral sub- ce, sometimes in the bone itself.

s manifested in the following manner:—The child complains of a fixed in the spine; the pain, however, is not confined to the spine, but it ex- ; down on each side, in the direction of the nerves arising from the l marrow. There is, weakness and pain in the back; pain on the sides, on one side than on the other; and the nerves arising from the verte- narrow, are inflamed in consequence of the pressure on the membrane e spinal marrow. After a little time, there is a projection of the spine vard, one, two, or three of the spinous processes projecting more than hers. It usually happens, that the lower extremities become affected; ıility is diminished, and the muscles lose a portion of their voluntary r. The patient sits with his limbs drawn under him, and his heels ds the nates, and there are, besides, spasmodic twitchings of the limb.

. There are particular symptoms in this disease, which in- e the vertebræ affected.

he lumbar or dorsal vertebræ be affected, there will be difficulty in dis- ing the urine, and the fæces will at length pass off involuntarily. ı the disease is in the neck, the head is the only part of the body, except the vital organs, which retains its power; volition is lost in all th of the body below the seat of the disease, and the patient is reduce most abject state of helplessness.

33. This disease of the spine is very apt to produce abs in the form of psoas and lumbar abscesses; which ver occasion a very considerable loss of substance.

34. *Treatment:*—The cure of this disease is effected upper portions of the vertebræ falling on the lower, an way giving rise to anchylosis.

To obtain this, you should keep the spine of the child as much a at rest; with this view, the child should be kept as steadily as can recumbent posture, so that the vertebræ may be suffered to fall int and by coalescing, effect anchylosis. If you attempt to keep straight, you will defeat the object of nature; do not keep the pat directly straight line, but rather assist nature in producing the un vertebræ.

35. In these cases, great attention should be paid posture, rest, and general health of the child: blisters and issues, are commonly employed, but they do more ha good.

With respect to the health, the child should have the best no taking care to avoid every thing which may produce feverish ex likewise airings in a carriage, care being taken that the body sho shaken.

If the child cannot be kept at rest, if the parents are unable, o observe these instructions, the next best treatment will be to ap Callow's backs, which is worn upon the spine, and fixed round the shoulders.

36. The part of the spine affected is of no importan respect to the cure: whether it be the neck, back, or loi will be no difference as to treatment, except in the form mechanical means which may be employed.

s to avoiding deformity in these cases, that is out of the question, for in of them deformity is inevitable: whatever you do, this cannot be pre- ited.

PSOAS AND LUMBAR ABSCESSES.

7. By these terms are understood chronic collections of ter, which form in the cellular substance of the loins, behind peritonæum, and descend in the course of the psoas muscle.

the disease forms on the side of the vertebræ, instead of the fore part, termed a lumbar abscess, instead of psoas.

3. The origin of psoas abscess is not, in general, attended 1 any symptoms of acute pain and inflammation, nor with any ile disturbance of the constitution.

evious to the appearance of any other symptom, the patient long feels naccountable sense of weakness across the loins, accompanied by an se, yet distressing pain; but this, so far from leading to a suspicion of iature of the disease is usually regarded as rheumatic.

9. The matter is formed slowly, and imperceptibly, and sions, at first, no manifest swelling, nor fluctuation.

hen the matter has collected, it spreads until it reaches the origin of the s muscle, which passes into ulceration, and forms a bag, surrounded by nplete ring. The abscess proceeds as far as the tendon of the muscle, 'oupart's ligament, and its further progress is restrained by the tendon; 1 it passes under Poupart's ligament, between the femoral vein and the hysis pubis, it has generally attained considerable magnitude.

). While the abscess is attended with no external tumour, diagnosis is always difficult.

on the first appearance of the tumour beneath Poupart's ligament, it sses so many of the characteristics of hernia as to be with difficulty known from femoral hernia; but the marks which distinguish it, are the pain in the loins, and the great constitutional derangement which the patient suffers in the progress of the complaint.

41. The outward swelling, at length occurring, may take place in various situations and assume different appearances.

The swelling, when in the groin, sometimes insinuates itself beneath the femoral fascia. In other instances, it descends as far as the knee, where it forms a prominent swelling. Sometimes it makes its way downwards into the pelvis, and occasions a swelling in the neighbourhood of the anus. Sometimes it tends towards the loins and sacrum, giving rise to a swelling exactly in the place where abscesses often make their appearance, in the disease of the hip-joint. In a few instances, the matter causes a swelling in the vicinity of the vertebræ; and, less frequently still, it makes its way through the abdominal muscles, and produces a tumour at some part of the abdomen.

42. *Causes:*—The causes of a psoas abscess are frequently involved in great obscurity.

It is supposed, sometimes, to arise from injury done to the back and loins by severe twists, blows, &c.: at other times, to proceed from sudden exposure to cold after severe exercise, particularly in scrofulous habits.

43. *Treatment:*—With respect to treatment, you must allow the abscess to take its course; very little can be done in this disease, until it has acquired considerable magnitude.

The use of issues is sometimes recommended in these cases; little can be done, however, to prevent its progress when it is once formed, and I do not know that any advantage is to be derived from counter irritation.

44. The treatment I should recommend, is to let the abscess proceed until you observe a redness or blush of the skin, and then adopt Mr. Abernethy's plan of making a valvular opening into the part, so as to discharge the matter, and close the wound immediately.

The danger does not arise from the quantity of matter accumulated, but om the irritation produced by the attempts of nature to close the abscess, d fill the cavity by the process of adhesion.

45. Four days after the abscess is opened, violent symptoms constitutional irritation are apt to come on, such as great pression of strength, loss of appetite, and the patient is soon duced to the lowest extremity.

It is extremely desirable to prevent the occurrence of these symptoms; and plan suggested by Mr. Abernethy is the best that has been proposed, with iew of preventing them. You are to make the opening obliquely, apply a ndage round the abdomen, and endeavour to bring the sides of the abscess close together as possible, in order to promote the process of adhesion. If eration should take place, the matter will be in this way discharged, and you can do, is, to support the efforts of nature.

46. In addition to the operation you adopt for this disease, I vise you to use all the means which I recommended in scro-a, for the purpose of improving the general health of the tient.

A considerable degree of rest should be enjoined. You may also inject the cess with a solution of sulphate of zinc or alum; it promotes the adhesive cess in the interior of the abscess, glues its sides together, and lessens the ulent secretion.

RACHITIS.

1. This is a peculiar disease produced by debility of the vas-lar system; and is commonly called rickets.

2. Rachitis first manifests itself in disease of the mesenteric nds; the abdomen is increased in size, the head is considerably

enlarged, and out of proportion to the rest of the body, so that the disease is often mistaken for hydrocephalus.

The chin is expanded, the sides of the jaws are brought together, and the whole of the features are altered, so that, in general, by merely looking at the face of a patient, you infer from it the nature of the complaint.

3. In rachitis, an alteration takes place in the form of the spine, which has a double curvature, above and below, like the italic *S*: and the other parts of the body are consequently affected by the distortion.

Under these circumstances, nature endeavours still to preserve the perpendicular line of the body, by producing a second curve as soon as one begins, and the equilibrium is maintained, though there is a considerable variation in the form of the spine. The scapula is also considerably projected; but pressure on the shoulder, with a view of remedying this defect, is a most absurd and unscientific practice; it may give pain, but can do no possible good. The spine, in these cases, has given way in two directions, and the ribs on one side are more curved than on the other. This incurvation of the ribs occasions the alteration in the form on the scapula. The anterior part of the chest is extremely projected; the sternum is sometimes sunk between the cartilages of the ribs, and sometimes advances so as to form what is called a chicken breast.

In addition to the parts already mentioned as influenced by rachitis, the bones of the extremities all undergo a curvature.

4. When this disease has continued for any length of time, absorption of some of the bones takes place, and nothing but the cartilage remains; such are the miserable changes to which rickety children are subject.

The cause of all these changes is a great deficiency in the powers of the circulation, in consequence of which, the bones lose their phosphate of lime, and become spongy at the extremities, and the joints, therefore, are exceedingly enlarged. The ossific matter binds down the cartilages, so as to prevent their expansion, hence arises a diminution of the ossific deposit, which leads to the alteration in the form of the bones.

5. *Treatment*:—With respect to the treatment of these cases,

will observe the same general principles which I laid down scrofula, and you will also resort to mechanical means. If head is affected, you must direct your mechanical means for benefit.

or the enlargement of the head, it will be right to use some sort of sure; a cap or roller round the head may be worn, for the purpose of renting the growth of the head, by the pressure of the arteries of the in.

. The next point of your treatment, is to prevent the curvae of the spine.

or this purpose, it has been the practice to keep children in the recumt posture for a great length of time. This is a plan which I by no means se; exercise should be freely allowed, taking care only that it be not tracted so as to occasion fatigue. At the same time exercise is taken, must preserve the spine in a straight position, by giving artificial supt. This may be effected by two springs of steel, added to the stays, one each side of the spine, which may be worn by the patient in any position. low's back is a good mechanical contrivance; it fits to the back of the ient, and is passed round the pelvis, without pressing on the sides; the sure is on the crista of the ilium, and not on the sides.

. In the use of mechanical means, the great object should be, to force the child into a constrained position, but merely to vent inclination on one side or the other.

SPRAINS.

. A sprain is an injury occurring to the ligaments or tenns surrounding a joint, which are either forcibly stretched laccrated.

t usually *happens from the* sudden extension of the joint in a direction which the muscles are unprepared for; in the same manner as w cation is produced, only that the violence is not sufficient to displacement of the bones.

2. The most common situations of these accidents at the wrist or ankle, arising from sudden falls, by joints are unexpectedly and forcibly bent.

These injuries are attended with considerable pain at the tir cident, and the part soon becomes swollen and tender; the forn arises from the effusion of blood in the first instance, out of blood-vessels, and becomes subsequently much increased fro tion; the tenderness and pain are generally in proportion to the At first the surface of the skin presents its natural appearanc short time, as the effused blood coagulates, it becomes much disc

3. When inflammation has been set up, and given effusion of fibrin, a sensation of crepitus is felt on the injured part.

Remember, this might, by an ignorant surgeon, be mistake pitus of fractured bone; but it never gives that distinct feel from the rubbing of one portion of broken bone upon another.

4. Immediately after the receipt of the injury, t motions of the joints can be readily performed.

However, as the swelling takes place, these motions becon peded, and ultimately cannot be performed without producin and increasing the mischief.

5. *Treatment:*—In the treatment of these case object is to arrest the hemorrhage from the lacerated then to prevent the occurrence of severe inflammation; to promote the absorption of the effused matter, ar restore the motions of the injured parts.

6. In the first stage, the application of cold, and

of the limb, will effect much in arresting the effusion, and preventing acute inflammation.

In addition to evaporating lotions, the position of the limb should be such as to relax those muscles which act on the injured tendons, and, at the same time, such as will favour the return of blood to the heart.

7. Should the pain and tumefaction increase in spite of these means, depleting measures must be adopted.

Leeches should be freely employed over the seat of mischief, and the bleeding encouraged by tepid applications; purgatives should also be given; and, in very robust persons, when the injury is extensive, general bleeding, and other constitutional remedies must be had recourse to.

8. When the inflammation has subsided, you should be particularly careful to effect the absorption of the effused matter.

It is from neglecting this part of your treatment, that many important diseases originate, especially in persons suffering from any constitutional disease, as in those affected with scrofula and so on.

9. In persons free from constitutional disease, these injuries, if not very extensive, are rapidly recovered from; the effusion quickly subsides, and the motions of the joints are restored.

In no case, however, should the patient be allowed to exercise the part as usual; wait until all marks of disease are removed, and then the motions of the part should be promoted by moderate and regular exercise. By a too early use of the part, the effects of the injury are kept up, so that weeks, months, or even years, may elapse, and the patient still suffer from them.

10. In persons suffering from constitutional disease, a chronic form of inflammation is often set up, which terminates in suppuration.

The suppurative process often affects the bones, makes them callous, and renders an amputation necessary; therefore, after you have removed the acute symptoms, be cautious to get rid of all the effects of the injury before the patient be allowed to *employ the limb.*

11. The treatment of the chronic stage must consist in rest, position, and the use of mild stimulants, with friction and moderate pressure.

The liniments of mercury, ammonia, or soap, may either of them be rubbed over the affected part, night and morning, afterwards making pressure by the application of a roller; or the part may be enveloped in straps of some stimulating plaster, over which the roller should be placed. I have also known good effects produced from pouring a continued stream of cold water on the part from a pump or large pitcher.

12. Should the disease prove obstinate, and be attended with occasional pain, the aid of counter irritation may with great advantage be produced.

This may be excited either in the form of blister, or the tartarised antimonial ointment.

DISLOCATIONS.

1. A dislocation is the removal of the articulating portion of bone from that surface to which it is naturally connected.

2. A limb, when dislocated, is generally rendered shorter than before, but there are two dislocations in which the limb is lengthened.

As in the dislocation of the femur into the foramen ovale, and the dislocation of the humerus into the axilla.

3. In dislocations, the axis of the limb is altered, and it becomes unnaturally fixed.

In the first moments, however, of the dislocation, considerable motion

d the position is not so determinately fixed as it afterwards be-
e motion of the joint is lost, flexion and extension are slightly
t rotation is completely prevented.

the early days of a dislocation, there are many cir-
s which render it difficult to decide on the absolute
the injury; and the difficulty is increased exactly in
to the time that has been allowed to elapse after the

l be found considerable swelling, and dull confused pain; or in-
e pain when the nerves are pressed upon. There will also be
ht crepitation, when dislocations have only occurred for a day or
is owing to the escape of synovia from the joint into the surround-
membrane, this becomes thickened by the absorption of the more
nd crackles under motion; a circumstance which every practi-
d be aware of, as this is often mistaken for fracture; but it does
t peculiar grating feel which the extremities of a fractured bone

ier dislocation, the parts are more or less injured,
to the severity of the accident; more especially the
nd tendons connected with the joint.

cation is not reduced, most curious changes take place. The
bone becomes much altered in figure, and this alteration is very
nced by the structure of the part on which it presses, whether on
muscles. Changes likewise take place in the soft parts, new
aments of condensed cellular tissue, are formed by the pressure,
of the muscles, which were torn through, become united, and
s accommodate themselves to their new axes, the limb is thus
permanently established.

uses:—Although dislocations generally arise from vio-
are accompanied by laceration of the ligaments of the
they sometimes happen from relaxation of the ligaments
ey also arise from other circumstances.

pecially likely *to occur* where there has been abundance of synovia.

secreted, which must have the effect of weakening the articulation. The patella is sometimes dislocated from this cause.

If muscles are put and kept long upon the stretch, their power of contraction is in a great measure lost; or, if from paralysis, they lose their action, a bone may be easily dislocated, and reduced as quickly.

Dislocations frequently arise from ulceration of the joints, by which the ligaments are detached, and the bones become altered in their relation to each other; this frequently happens in the hip.

7. Dislocations are sometimes accompanied with fracture. At the ankle joint, a dislocation seldom occurs without fracture of the fibula; and sometimes the acetabulum is broken in dislocations of the hip-joint.

When a bone is both fractured and dislocated, it is best to reduce the dislocation without loss of time, taking care that the fractured part be strongly bandaged in splints, to prevent any injury being done to the muscles: for, if this be not done at first, it cannot afterwards, without, in all probability, disuniting the fracture.

8. A dislocation may be *partial*, that is, resting in part on the natural articulating surface; or *complete*, when the two surfaces are perfectly separated.

Incomplete dislocations only occur in ginglymoid articulations, as those of the foot, knee, and elbow. In these, the luxation is almost always incomplete; and very great violence must have operated, when the bones are completely dislocated. In the elbow, the dislocation is partial, with respect both to the ulna and radius. In the orbicular articulations, the luxations are almost invariably complete.

9. Dislocations may also be *simple* or *compound*: the first is a simple separation of the surfaces; and the compound is that in which the articulating surfaces are not only displaced, but in which there is also a division of the integuments and capsular ligament, by which the cavity of the joint is laid open.

Compound dislocations are generally attended with great danger, from the inflammation of the lacerated ligament and synovial membrane which edily succeeds; this is soon followed by suppuration, and granulations ise from the surface of the secreting membrane.

Poultices were formerly used to these cases; but they ought not to be ployed. After reducing the dislocation, bring the integuments closely gether by adhesive plasters, and let the joint remain undisturbed for several ys, and it is probable that adhesion will take place.

If there should be great difficulty in reducing the dislocation, as, for ample, in the ankle, it is better to saw off the protruded portion of bone, pecially when there is great spasmodic action of the muscles; the bone terwards granulates, and, if passive motion be used in proper time, a very eful joint may be restored.

10. *Symptoms:*—Every dislocation produces pain and incapa-ty in the limb; but the train of symptoms attending luxations e so equivocal, that very few can be relied on as positive.

In order that a dislocation may happen, there must be a particular attitude the limb during the action of the external violence. Indeed the displace-ent can hardly occur from the direct action of the cause on the articulation elf. The action of the luxating cause is the more efficient, the further it from the joint, and the longer the lever is, which it affects.

11. *Prognosis:*—In general, every unreduced dislocation must eprive the patient more or less completely of the use of the limb; r nature cannot re-establish the natural relations which are st.

There is indeed an effort made to restore some of the motions, and the use the limb in a certain degree; but, it is always very imperfectly accom-ished, and, in the best cases, only a confined degree of motion is acquired. ature cannot in any way whatever alter the lengthened or shortened state the limb; and she can only correct, in a very imperfect manner, its faulty rection.

12. *Reduction:*—The difficulty in reducing a dislocation is in roportion to the time which has been allowed to elapse after the cident. Difficulties also arise from other causes.

In recent cases, reduction is easily effected, but if it has happened a few ys, or at most, a few weeks, they are reduced with great difficulty. In those cases, where it has been said the dislocations have been reduced a long time after the accident, the patient has never been able to use the joint extensively.

13. Muscular power in your patient is a very great difficulty; for the exertion necessary to reduce the dislocation, must necessarily be very great.

In muscular persons, the reduction of the humerus ought never to be attempted after three months; but, if the patient be less muscular, four months should be the utmost limit. In dislocations of the thigh, two months may be fixed on as the time, beyond which it would be wrong to make any attempt, except in a person of a very relaxed fibre, when a little more time may be allowed.

14. Difficulties in reduction, likewise arise from the head of the bone catching against the articulating cavity.

As in the dislocation of the thigh bone into the foramen ovale, and ischiatic notch, where it is necessary to raise the head before it can be returned; or where the head of the bone is larger than its cervix, as in dislocations of the radius.

15. The peculiar ligaments of the joints may prevent the reduction of dislocations.

This is particularly to be noticed in the knee, where the bone should be moved in such a direction as to relieve that ligament which remains entire. The ligaments of the ankle joint are of extraordinary strength, and the bones of this joint will often rather break, than their ligaments give way.

16. The principal obstacles, however, which you will meet with, to the reduction of dislocations, is the powerful, rigid, involuntary contractions of the muscles, and this power is proportioned to the length of time which has elapsed after the injury.

This powerful contraction is to be overcome by promoting general relaxation. This must be effected by constitutional remedies, and gentle but continued force of extension; hence the great advantage of considering the power and direction of the larger muscles previous to making any attempt at reduction.

17. The most powerful mechanical means, if not assisted by constitutional remedies, will sometimes fail; you must therefore have recourse to such treatment as will produce a tendency to syncope, and this necessary state may be best induced, either by nausea, bleeding, or the warm bath.

Bleeding I consider the most powerful; but in recent cases it is not required. That the effect may be produced as quickly as possible, the blood should be drawn from a large orifice, and the patient kept in the erect position.

Where the warm bath is thought preferable, it should be employed at the temperature of 100° to 110°, and, as the object is to produce fainting, he should be kept in it until this is effected, then immediately wrapt in a blanket, and the mechanical power applied.

Nausea may be kept up or produced by giving small doses of tartarized antimony, as a quarter or half a grain every five minutes; and a good proof of the effect of nausea is, the man's being unable to lift his hand on a level with his shoulder. As its action is uncertain, it is best to use it, with a view of keeping up the nausea first produced by the two preceding measures.

18. Another mode of relaxing the muscular power is, by gentle and steady extension.

The force should be gradually applied, and it is in this way only that that state of fatigue and relaxation is produced which is sure to follow continued extension, and not attempt at once to overpower the action of the muscles.

The most effectual mode of tiring the muscular power is by the pullies, which have this advantage over extension made by assistants, that your force is *gentle* and *continued*. First pass a wetted roller round the limb, and over this, buckle on the leather with the rings to which the pullies are to be fixed. Having fixed them on, draw the cord very gently, until you feel the muscles making some resistance, then rest two or three minutes and extend again; and so on until you see the muscles beginning to quiver, and by a little further extension they will be overcome, and the bone easily slips into the socket. The best place to fix the pullies is on the bone to be reduced.

It is not necessary, in recent dislocations, to use pullies, excepting those of the thigh, in which they should always be used: and they should be used also in dislocations of the shoulder, which have remained long unreduced.

19. After lessening, or indeed, overcoming the action of the muscles, you must effect the reduction, by fixing one bone and drawing the other towards the socket.

Great attention should be paid to the fixing of that bone in which the socket is placed; for, without this precaution, you may often be foiled in your attempts.

20. After the reduction is effected, the part from which the bone was dislocated must be well secured, as without the aid of bandages, the bone will not remain in its situation until the muscles surrounding the joint recover their action. Rest is also necessary for some time, to allow the ruptured ligaments to unite.

Rest is the principal thing to be attended to, and guard against an excess of inflammatory action in the joint and surrounding parts, by an evaporating lotion, as the white wash, and by the application of leeches, if necessary.

COMPOUND DISLOCATIONS.

21. Compound dislocations are those, which are attended with a wound communicating with the cavity of the injured joint.

In most instances, the opening in the skin is caused by the protrusion of the bone, but sometimes by the part having struck against a hard, or an irregular body.

22. When the dislocation of a large joint is conjoined with an external wound, leading into the capsular ligament, it is a circumstance, that has a particular tendency to increase the danger.

In many cases, injuries of this description are followed by violent and *extensive* inflammation, abscesses, mortification, fever, delirium, and death. *When* the patient is advanced in years, much debilitated, or of an unhealthy table constitution, a compound luxation, especially if attended with much tusion and other injury of the soft parts, and wrongly treated, very often a fatal termination.

23. Compound dislocations, from the great injury to the joint, d the constitutional symptoms which attend them, sometimes e rise to the necessity for amputation.

he following are some of the circumstances which I have known to re-ire amputation in compound dislocations of the ankle, from which you y make some general conclusions. The advanced age of the patient:—a ry extensive lacerated wound;—difficulty of reducing the ends of the bones, hould consider rather as a reason for sawing them off, than for amputation; the extremely shattered state of the bones;—division of a large blood-vessel, tended with extensive wound of the soft part;—mortification;—excessive ntusion;—extensive suppuration;—necrosis, where the sequestra do not mit of removal;—very great and permanent deformity of the foot;—a very itable state of constitution, &c.

24. The treatment of a compound dislocation requires the duction to be effected without delay, and with as little violence d disturbance as possible.

When the extremity of the bone protrudes, and is smeared with sand or t, as frequently happens from its having touched the ground, it should washed with warm water, as the least extraneous matter admitted into e joint will produce and support a suppurative process.

If the bone be shattered, the finger is to be passed into the joint, and the tached pieces are to be removed; but this is to be done in the most gentle nner possible, so as not to occasion unnecessary irritation; and if the und be so small as to admit the finger with difficulty, and small loose eces of bone even be felt, the integuments should be divided with a lpel, to allow of such portions being removed without violence.

If any difficulty of reduction should arise from the bone being girt by e integuments, the opening in them should be dilated with a scalpel.

25. The bones being carefully reduced, you must then pay tention to the state of the wound, and to local applications.

The wound is to be freed from any dirt, clots of blood, or other extraneous tter, *and its lips are to be* accurately brought together, and lint dipped in the blood used as a first dressing. The limb is then to be bandaged, padded, put in splints, and kept perfectly at rest in an eligible position. The parts are afterwards to be preserved cool by the free use of the liquor plumbi subacetatis dilutus, or with, what is better, spirit of wine and water.

26. As regards the medical treatment of these cases, you must be guided entirely by the circumstances you have to encounter.

In ordinary cases, in the country, if the patient is strong and young, you may bleed. An anodyne, the first night or two will be highly proper. Saline draughts, antimonials, and a low regimen, are also indicated during the first few days of the symptomatic fever. Purgatives must be used with the utmost caution, as much mischief may arise from the disturbance of the limb; that which is to be done by bleeding and emptying the bowels, should be effected within an hour or two after the accident, before the adhesive inflammation arises.

27. If the case takes a favourable course, the constitutional fever will not be excessive, nor will the pain and inflammation of the limb be immoderate.

Sometimes, the wound unites, more or less, without suppuration; a circumstance particularly desirable, as tending more than any thing else to lessen the danger, by changing the case, as it were, from a compound to a simple dislocation. In other cases, the wound is not united; but the inflammation and suppuration are not violent, nor extensive; the constitution is not dangerously disturbed; and hopes of ultimate success may be reasonably entertained.

28. When the symptomatic fever and first inflammatory symptoms are over, and the suppuration still copious, and attended with marks of approaching weakness, you must alter your treatment.

While the discharge of matter is considerable, and the parts are tense and painful, emollient poultices are recommended. You must allow your patient more food, and give bark, cordials, porter, wine, &c. If his nights are restless, he must have opiates: if he sweats profusely, sulphuric acid; and, in short, all such medicines as his particular complaints may require, are to be prescribed.

29. In respect to the dressings, you must remove or moderate them, as your cases may require.

If the patient complain of considerable pain in the part, in four or five days, the bandage may be raised to examine the wound; and, if there be much inflammation, a corner of the lint should be lifted from the wound to give vent to any matter which may have formed; but, this ought to be done with great circumspection, as there is danger of disturbing the adhesive process, if that be proceeding without suppuration. By the local treatment you have been advised to adopt, it will every now and then happen, that the wound will be closed by adhesion; but, if in a few days it be not, and suppuration take place, the matter should have an opportunity of escaping, and the lint being removed, simple dressings should be applied. After a week, or ten days, if there be suppuration with much surrounding inflammation, poultices should be applied upon the wound, leeches in its neighbourhood, and upon the limb at a distance, the evaporating lotion should be still employed; but, as soon as the inflammation is lessened, the poultices should be discontinued.

DISLOCATIONS OF THE SPINE.

30. If dislocation of the spine does ever happen, it is a very rare accident, and I have never met with a case. The accidents on which we are about speaking, would be far more properly called, *fractures of the vertebræ.*

It is possible that a dislocation of the cervical vertebræ might happen, as the articulating processes are more oblique in them than in the other vertebræ.

31. Dislocations of the spine seldom occur without a fracture of the articulating processes, or of the arches of the vertebræ.

When the cervical and dorsal vertebræ are fractured, the spinal marrow is generally torn; but in the lumbar vertebræ, the medulla spinalis becomes firmer, and is not so easily lacerated.

32. Whenever fracture happens, displacement is generally the

immediate result, and the spinal marrow becomes compressed, by the arches of the vertebræ.

The symptoms produced by pressure on the spinal marrow, are a loss of sensibility, and of motion in the parts supplied from that portion of the medulla spinalis, below the accident.

33. The consequences from compression on the spinal cord, depend entirely on its approximation to the brain. If the upper vertebræ be injured, sensation is lost in the upper extremities; if the dorsal vertebræ, or upper lumbar, the lower extremities become insensible; and if the lumbar be injured, the fæces pass involuntarily, and the urine is retained.

These phenomena may be accounted for in this way; the nerves of volition supplying the sphincter ani are injured, and the power of retention is lost, whilst the involuntary peristaltic action of the intestines continues; the nerves supplying the acceleratores urinæ, being in part derived from the cauda equina, have their functions destroyed, the will has no influence on the bladder, and the evacuation of the urine is prevented, being opposed by the elasticity of the urethra. When the patient becomes very weak, and is almost dying, the urine passes away stillatitiously, from the elasticity of the urethra being diminished.

34. The time you may expect a patient to live after accidents of the present kind, will depend very much whether the injury is near or distant from the cervical vertebræ; whether the displacement is slight or otherwise, and upon the degree of injury the spinal marrow has sustained.

Persons live sometimes three or four weeks after the accident, but if any of the cervical vertebræ be broken above the fourth, death is immediately the result; the phrenic nerve is paralysed, and the action of the diaphragm consequently suspended, and respiration can no longer be performed.

35. It has been attempted in these cases of displacement, to *remove* the portion of bone which presses on the cord; but *hitherto* without success.

DISLOCATIONS OF THE RIBS.

36. Dislocations of the ribs have been described by authors, but I have never seen such a case.

J. L. Petit does not imagine these cases to occur; while on the other hand, Ambrose Paré, Barbette, Juncker, Platner, and Heister, not only admit the occurrence of luxations of the ribs, but describe different species.

37. Although dislocation of the ribs is questionable, there is frequently a displacement of the cartilages, which is mistaken for dislocation of the ribs.

This arises from constitutional weakness, the arch of the rib is diminished, the sides flattened, and therefore the extremity of the ribs with the cartilages are thrust forward. It is generally the result of rickets.

38. Very rarely, a cartilage may be torn from its connexion with the sternal end of the rib, and project over its surface. The same treatment would be necessary as in fracture of the ribs.

Desire the patient to make a deep inspiration, then depress the projecting cartilage, put a wetted paste-board splint upon the part, and apply a flannel roller over it.

DISLOCATIONS OF THE CLAVICLE.

39. The sternal end of the clavicle is dislocated in two directions, forwards and backwards; most frequently forwards, when it is thrown upon the fore and upper part of the sternum.

This accident may be easily distinguished by the swelling seen on the upper part of the sternum, and, if the fingers be carried upon the surface of the sternum upwards, this projection stops them; but if there be any doubt about it, place your knee against the spine, draw the shoulders backwards, and the clavicle sinks into its natural situation; but immediately you remove the extension, the swelling again protrudes. If the shoulder be elevated, the projection descends, if the shoulder be drawn downwards, the extremity of the clavicle passes upwards, towards the neck. The motions of the clavicle are painful, and those of the shoulder performed with difficulty.

40. When the clavicle is dislocated before the sternum, the reduction is easily effected in the way just pointed out; apply the clavicle bandage; and there is no occasion to support the arm.

41. The second dislocation of the clavicle is backwards, behind the sternum. These are very rare occurrences, and are generally the result of deformity in the spine, consequently there is no mode of reducing them.

These cases do not produce much difficulty of breathing, because the trachea is pushed to the other side; but the œsophagus is compressed, and produces great difficulty of swallowing.

42. The most frequent dislocation of the clavicle, is the scapular end.

This dislocation may be detected by putting the finger on the spine of the scapula, and tracing it forwards towards the acromion, where the finger will be stopped by the projecting portion of the clavicle. The shoulder will be depressed and drawn inwards towards the sternum, and from the projection of the clavicle will appear flattened, something like the dislocation into the axilla.

43. In the reduction of this dislocation, you may use the mode that was employed in the dislocation at the sternal end.

Let the knee be put between the patient's shoulders, and draw them backwards and upwards, and the clavicle immediately is brought into its place; *then put* a thick cushion into each axilla, to keep the scapula from the side, *to raise it*, and to prevent the axilla from being injured by the bandages the clavicle bandage is to be applied, and its straps should be broad ;h to press upon the clavicle and scapula. The arm should be supported hort sling, so as to keep the scapula well up.

DISLOCATIONS OF THE HUMERUS.

:. The humerus is liable to be dislocated in four directions, into the axilla, forwards under the clavicle, backwards on dorsum scapulæ, and partially.

i. *First Dislocation:*—The most common dislocation of the ıerus, is *downwards and inwards* into the axilla.

this case, the bone rests on the inner side of the inferior costa of the ıla.

;. This dislocation may be known by the projection of the mion; by the natural rotundity of the shoulder being lost; he deltoid muscle being flattened, and dragged down with the l of the bone.

e arm is rather longer than the other, and the elbow is carried from the Although the arm is longer than natural in a recent dislocation, yet ; accident has been of some duration, the head of the bone becomes lded in the softer parts, and the limb is shortened. The elbow is with ılty brought to the side, from the head of the bone being in this attempt ɔd upon the axillary plexus of nerves, and the patient will generally to you, supporting the arm with the other hand, to prevent its weight ıng upon these nerves. If the elbow be carried outwards, nearly at angles with the trunk, the head of the bone can be distinctly felt in the ı. The raising the elbow throws the head of the bone downwards, and into the axilla, and can therefore be more easily felt in the axilla. motion of the joint upwards and outwards is in a great measure lost, onsequently the patient cannot raise his hand to his head. The central of the limb may also be observed to run into the axilla. There is ly a numbness in the fingers from the pressure of the head of the bone ; axillary plexus.

47. The common causes of dislocation of the humerus into the axilla, are, falls directly on the shoulder; falls upon the hand while the arm is much raised; and by a fall upon the elbow when the arm is raised from the side. They are also very apt to recur from very slight causes.

48. If the muscular power is considerable, or if the accident has occurred a few days, the reduction is usually easily accomplished.

Place the patient in a chair, let the scapula be well secured by a bandage passed over it with a slit in it to receive the arm, and buckled over the acromion; this keeps the bandage close up in the axilla, and more completely fixes the scapula: or it may be done with a towel folded round the arm, just above the elbow, to protect the skin, and upon this a strong worsted tape is to be fastened with what the sailors call the clove-hitch: the arm should be raised at right angles with the body, or a little above it, to relax the deltoid and supra-spinatus. Two persons should now make extension from the bandage fastened to the arm, and two from the scapular bandage, with a steady and equal force. After the extension has been made a few minutes, the surgeon should place his knee in the axilla, resting his foot on the chair on which the patient sits, and raise his knee by extending his foot; and, placing his hand, at the same time, on the acromion, he pushes it downwards, when the head of the bone usually slips into its place. While the extension is making, a gentle rotatory motion will diminish the counteracting power of the muscles, and assist the reduction; the fore-arm should be bent to nearly right angles with the upper arm.

49. If the limb has been a long time dislocated, and if the muscles are so firmly contracted, that the force to be applied in the way we have just recommended does not succeed, the reduction must be attempted by pullies; more on account of employing the force gradually and equally than of their increase in power.

The patient should sit between two staples fixed in the wall, the bandages are to be applied in the way before described, and the surgeon should draw the pully himself, and the degree of extension be gradually increased, until the patient complains of pain, then stop a little and extend again. Here [illegible] mention to you the great advantage to be gained in engaging the patient's attention, and directing it to some other object during the attempt at reduction. Then extend the arm again, and continue it until the patient again complains; and thus, at intervals of three or four minutes, you may continue the extension for a quarter of an hour.

If this plan should not answer, you must use the constitutional measures before pointed out, and try extension again.

50. If the patient should be an elderly lady, or a relaxed emaciated person, you may generally succeed in reducing the dislocation by more simple means.

Put the person in a low chair, carry the knee into the axilla, by separating the arm sufficiently from the side, and let your foot rest on the side of the chair, take hold of the arm firmly, just above the condyles, with one hand, and place the other on the shoulder, draw the arm over the knee, raise the knee a little at the same time, and depress the shoulder with the other hand; when the bone will generally slip into the socket.

51. We have now gone through the usual methods for reducing the dislocation in question; but the mode I adopt in all recent cases, and would recommend to you in ordinary cases, I will now relate.

Lay the patient on his back, either on a bed or sofa, and bring him near to the edge of it; let a towel be passed over the scapula, in the manner before mentioned, and given to a person to hold fast; then tie a handkerchief above the elbow, having previously passed a wetted roller round the arm, carry the patient's arm from his side, and sit yourself on the edge of the bed; then place your heel in the axilla, and extend the arm, draw steadily for three or four minutes, and the bone is replaced.

If more force should be required than you can make with the handkerchief, you can pass a towel round the arm in its stead, and let two or three persons pull at it, the heel being still kept in the axilla.

52. *Second Dislocation:*—The second dislocation is *forwards*, beneath the clavicle, upon the second rib, and having the coracoid process on its outer side.

This *dislocation may be known* from the preceding, by the projection of the acromion appearing greater, from the depression of the deltoid being more considerable, by there being less pain, and by there being a prominence beneath the middle of the clavicle. On rotating the arm, the head of the bone may be felt to roll, the elbow is thrown from the side, and at the same time backwards; and the motions of the arm are more confined than in the first dislocation.

53. The reduction of this dislocation is to be accomplished by the same means as in the first dislocation. The same bandage should be used, and the arm bent; but the direction in which the bone is drawn, is the principal circumstance to be attended to.

The extension must first be made obliquely *downwards* and *backwards*, until the head of the bone has passed the coracoid process, then the arm may be raised in a *horizontal* direction, and, by the pressure of the heel in the axilla, the bone will be easily returned.

54. In the dislocation forwards, an injury of great violence may occasion the head of the bone to be forced through the integuments.

In such cases, the reduction should be immediately effected in the usual manner. A suture should be introduced, and lint, dipped in blood, applied to the wound, and adhesive plaster, to retain the apposition of the wound; the limb should be kept close to the side by a roller, including the arm, and the least motion prevented. By this treatment, the suppurative inflammation will not occur, and the patient's life not be endangered.

55. *Third Dislocation:*—The third dislocation is *backwards*, on the dorsum scapulæ, just beneath the spine; and may be readily known by the projection of the head of the bone, and by its following the movements of the elbow when rotated.

The reduction of this dislocation is to be effected by the same measures as used for the first; the bandages are to be applied in the same manner, and the extension made in the same direction, rotating at the same time, the head of the bone *inwards*.

Fourth Dislocation:—The fourth dislocation of the hu- s is only *partial*, and is a very frequent accident.

his dislocation, the head of the bone is thrown forwards against the ›id process:—there is a hollow at the back part of the shoulder joint; is of the arm is thrown inwards and forwards; the under motions of the re still performed, but it cannot be raised, from its striking against the ›id process. The head of the bone may be felt to rotate.

. The reduction of this dislocation is the same as that for islocation forwards; but the shoulders should also be drawn wards, to bring the head of the bone into the glenoid cavity.

er the reduction, the shoulders must be secured by the clavicular ıge, or the bone will again slip forwards, against the coracoid process.

. There are three accidents about the shoulder joint with h dislocations are liable to be confounded; viz. fracture of acromion, fracture through the neck of the scapula, and ure through the neck of the humerus.

. *First Accident:*—In fracture of the acromion, the round- of the shoulder is in some measure lost, and the head of bone drops towards the axilla; and it may be readily dis- iished by the shoulder regaining its proper shape on support- he arm, and by its again sinking when that support is re- ed.

you trace the spine of the scapula forwards to the clavicle, on reaching part, the finger sinks into a depression; then raise the arm, and place ıand firmly on the acromion, and rotate the elbow with the other, and will distinctly perceive a crepitus. In the treatment of this accident, ıre to make the head of the os humeri act as a splint, to support the de- ›d portion of bone: with this view, then, you support the elbow in a sling, and bend the fore-arm across the chest; put a thick pad between lbow and the side, so as to separate it widely from it, in order to relax leltoid. Let the motion of the arm be perfectly prevented, by bending mly to the chest by a roller, and let the elbow be carried a little back- ls. The arm should be kept firmly fixed for three weeks; it will unite by bone, if motion be prevented, but, as this is very difficult to accomplish, the union is generally ligamentous.

60. *Second Accident:*—Fracture through the neck of the scapula is more likely to be mistaken for dislocation than any other; but by carrying the hand over the shoulder, and resting the finger on the caracoid process, and then rotating the arm, a crepitus will be felt. Again, place your arm under the arm of the patient, and, by raising it a little, you will restore the natural appearance of the joint; but when you take away your support, the shoulder will again sink.

The treatment of this fracture is, to place a thick pad in the axilla, to carry the humerus, and with it, the glenoid cavity *outwards;* to support the humerus in a short sling to preserve the parts in apposition.

The clavicular bandage will assist in keeping the head of the bone outwards, and the motion of the arm may be prevented, by confining it to the chest by a roller.

It requires from ten to twelve weeks for its recovery, and continues weak for three weeks after.

61. *Third Accident:*—Fracture through the neck of the humerus, may be distinguished from dislocation in the same manner as the accident just mentioned, and by passing the hand over the shoulder-joint, and fixing the head of the humerus with the fingers, whilst at the same time having raised the elbow, and carried the upper part of the humerus a little outwards, you will feel a crepitus on rotating the elbow, but the head of the bone does not follow the rotation of the arm.

In this accident, you are to apply a roller, from the elbow to the shoulder-joint, and put a splint on the inner and outer side of the arm, to be confined by another roller; a thick pad is to be placed in the axilla, and the arm gently supported in a sling. The principal difficulty is to prevent the pectoral muscle drawing the body of the bone forwards; but, if the inner splint be properly applied, its influence will be counteracted.

It requires from three to six weeks to unite, according to the age of the patient.

DISLOCATIONS OF THE ELBOW.

62. The elbow may be dislocated in five directions; viz. both ones backwards, laterally, ulna backwards, the radius forwards, d the radius backwards.

63. ***First Dislocation*:**—The dislocation of *both bones backards*, is strongly marked by the alteration in the form of the int, and by its great loss of motion.

There is considerable projection formed posteriorly by the ulna and radius. each side of the olecranon, there is a hollow; a large hollow swelling is t at the fore part of the joint, immediately behind the tendon of the biceps ich is the extremity of the humerus. The hand and fore-arm are in a te of supination, and you cannot turn them prone.

64. The accident usually occurs in this way: a person when lling, puts out his hand to save himself; but, the arm not ing perfectly extended, the whole weight of the body is thrown on the radius and ulna, and they are forced behind the axis of e humerus.

In reducing this dislocation, let the patient be seated on a chair, take ld of his wrist, and put your knee on the inner side of the elbow-joint, n bend the fore-arm, and, at the same time, press upon the radius and a with the knee, so as to separate them from the humerus, and so as to ow the coronoid process of the ulna from the posterior fossa of the merus, where it is lodged. Whilst this pressure is kept up by the knee, arm is to be forcibly, at the same time gradually, bent, and the bones ll slip into their places.

After the reduction, the arm should be kept fixed, and a bandage applied, ich should be kept wet with an evaporating lotion, and the arm supported a sling. The fore-arm should be bent, at rather less than a right angle th the upper arm.

65. *Second Dislocation*.—The elbow is sometimes dislocated, *laterally*, when the ulna will be thrown either on the external or internal condyle.

When thrown *outwards*, the projection is greater than in the dislocation backwards; as the coronoid process, instead of being lodged in the posterior fossa, is thrown behind the external condyle, and the radius forms a protuberance behind, and on the outer side of the humerus, so as to produce a hollow above it; on rotating the hand, the radius may be felt to move.

When the ulna is thrown upon the *internal* condyle, it projects posteriorly, as in the dislocation outwards, and the head of the radius is situated in the posterior fossa of the humerus. It may be known by the great projection of the external condyle of the humerus, and by the hollow above the olecranon on the inner and back part of the arm.

66. This dislocation may be reduced in the same manner as the first dislocation.

You bend the arm over the knee, without turning it directly outwards or inwards; for, as soon as the radius and ulna are separated from the humerus by the pressure of the knee, the biceps and the brachialis internus, which have before been kept powerfully upon the stretch, give the bones the proper direction for reduction.

67. *Third Dislocation* :—The third dislocation is *backwards*. The *ulna* is sometimes thrown backwards upon the humerus, whilst the radius remains in its proper situation.

The deformity of the limb is very great, by the fore-arm and hand being twisted inwards, whilst the olecranon projects considerably. The fore-arm cannot be extended, nor can it be bent to more than a right angle. It is rather more difficult to detect than the other dislocations of the elbow, but it may be known by the projection of the ulna, and the twisting in of the fore-arm.

68. This dislocation is more easily reduced than when both bones are dislocated.

You may do it readily, by bending the arm over the knee, and drawing the fore-arm downwards. In addition to the action of the brachialis internus, the radius, by resting on the external condyle, will act as a lever to the fore-arm in pushing the os humeri backwards on the ulna, when the arm is bent.

69. ***Fourth Dislocation:***—The ***radius*** is sometimes sepa-ted from its connexion with the coronoid process of the ulna, id is thrown ***forwards*** into the hollow above the external con-le of the os humeri, and upon the coronoid process of the na.

In this dislocation, the fore-arm is slightly bent, but cannot be brought to ight angle with the upper, nor can it be perfectly extended; when bent ldenly, the flexion is checked by the head of the radius striking against fore part of the os humeri. The hand is between pronation and supina-a, but neither can be done perfectly: and it is nearer pronation. By rying the thumb into the fore-part of the elbow-joint, and rotating the ad at the same time, the head of the radius will be felt to rotate also; d this, with the sudden check to the bending of the fore-arm, are the best rks of the injury.

70. This accident happens from a fall upon the hand, when e arm is extended, and the radius receives the weight of the dy.

n your attempt of reduction, the hand should be turned supine, the e-arm should be bent, and extension made from the hand, without in-ding the ulna.

71. ***Fifth Dislocation:***—Of the dislocation of the ***radius ckwards,*** I have never seen a case in the living body; but ubject was brought into our dissecting room with this acci-nt.

n a dislocation of the head of the radius backwards, the fore-arm is t, and the hand fixed in the state of pronation. Supination can neither performed by the action of the muscles, nor by external force; and every empt to execute this movement produces a considerable increase of pain. e hand and fingers are moderately bent, and the upper head of the radius y be observed forming a considerable projection behind the lesser head the humerus.

72. I should suppose that this dislocation might be easily duced by *bending the fore-arm.*

The reduction, however, is said to be accomplished, by extending the fore-arm, and endeavouring to bring it into the supine posture, at the same time, that the surgeon tries to press, with his thumb, the head of the radius forwards, towards the lesser tubercle of the humerus, and into the little sigmoid cavity of the ulna again. Success is indicated by the patient being now able to perform the supine motion of the hand, and to bend and extend the elbow with freedom.

73. For the purpose of preventing a return of the displacement, and giving nature an opportunity of repairing the torn ligaments, measures must be taken to hinder the pronation of the hand.

Boyer recommends, with this view, a roller, compresses, and a sling; but Mr. Samuel Cooper imagines, that a splint, extending nearly to the extremity of the fingers, and laid along the inside of the fore-arm, with a pad of sufficient thickness to keep the hand supine, would be right, in addition to the sling, roller, &c.

DISLOCATIONS OF THE WRIST.

74. Dislocations of the wrist joint are of three kinds, viz. both bones; the radius forwards; and the ulna backwards.

75. *First Dislocation:*—Dislocation of both bones is not of very frequent occurrence; but the bones may be either thrown backwards or forwards, according to the direction of the force applied.

If a person, in falling, receives his weight upon the palm, the carpal bones are thrown backwards, and the radius and ulna forwards. When this is the case, a swelling is produced by the radius and ulna on the fore part of the wrist, and a similar swelling is produced on the back part, with a depression above it. The hand is forcibly bent back.

If a person fall on the back part of the hand, the carpus is forced under the flexor tendons, and the radius and ulna are thrown upon the back part of the hand. These two projections become the diagnostic marks of the acci-

t, and will distinguish it from a swelling, on the fore part of the hand,
ut the flexor tendons, in consequence of a violent sprain; as in this case
e is only one swelling, and it does not appear immediately after the
ident, but gradually increases in size.

'6. The reduction of the first dislocation of the wrist joint,
ither form, is not difficult.

rasp the patient's hand with your right, and support the fore-arm with
r left hand: whilst an assistant places his hands firmly round the arm,
above the elbow. Then let both extend, and the bones are soon re-
ed. The muscles will direct the bones into their proper situation, as
as the extension is sufficiently made. A roller should be applied
d the wrist, wetted with an evaporating lotion, and a splint be placed
re and behind to the fore-arm, reaching to the extremities of the meta-
pal bones.

7. *Second Dislocation:*—The radius only is sometimes
own forwards upon the carpus; in this case, the outer side
the hand is thrown backwards, and the inner forwards. The
remity of the bone forms a protuberance on the fore part of
wrist.

he extension necessary to reduce this dislocation, and the after treat-
it, are the same as when both bones are displaced.

'8. *Third Dislocation:*—The ulna is sometimes separated
m the radius by the rupture of the sacriform ligament, and it
ally projects backwards.

his dislocation may be known by the projection above the level of the os
eiform, and by its being easily returned by pressure to its former situation,
by its rising again when the pressure is removed.

fter you have put the head of the bone into its place, put a compress of
ber on its extremities, to keep it in a line with the radius. Splints should
placed along the fore-arm, and a roller applied over the splints, to
fine them with firmness.

DISLOCATIONS OF THE CARPAL BONES, ETC.

79. *Carpal Bones:*—A dislocation of a carpal bone is of very rare occurrence, and generally happens from a person, when falling, receiving the weight of the body on the part; and it is also sometimes attended with a fracture.

In these cases, straps of adhesive plaster should be braced rather tightly about the wrist, to support and strengthen it; and over these you should pass a bandage, which would afford it additional support. Pumping cold water, from a considerable height, is also very useful, and rubbing the parts afterwards with a coarse towel, gives vigour to the circulation, and increases the strength of the joint. Sometimes ganglia are mistaken for dislocations of the carpal bones, but these are easily removed by striking them smartly with the flat surface of a book, and the supposed dislocation immediately disappears.

80. A compound dislocation of the carpal bones frequently occurs; it arises, generally, from the bursting of guns, or the hand being cut in machinery.

In these cases, one or two of the carpal bones may be dissected away, and the patient recovers without losing his hand, and also preserves a considerable degree of motion in the part. If, however, greater injury be done, amputation is generally required.

81. *Metacarpal Bones:*—I have seldom seen the metacarpal bones dislocated, except as the result of excessive violence. They are so firmly connected with the bones of the carpus, that great force is necessary to separate them, and so much injury is done to the parts that amputation is generally necessary.

These cases usually happen from the bursting of guns, or the passage of heavy bodies over the hand. If it should happen that the metacarpal bones of the middle and ring fingers require to be removed, you may bring the fore and little fingers so nicely together, as to produce little deformity; that is, if you can succeed in procuring union by adhesion.

82. *Fingers and Toes:*—Dislocations of the fingers and toes e accidents of rare occurrence; for in addition to their capsular d lateral ligaments, their articulations are powerfully strengthed by the extensor and flexor tendons.

83. When dislocations of the fingers take place, they are more equently found between the first and second phalanges, than etween the second and third.

A dislocation in this place can be readily ascertained by the projection the first phalanx backwards, while the head of the second can be felt on e fore part less distinctly.

84. If the finger has not been dislocated many hours, you an easily reduce it; but if it has been neglected at first, the eduction can only be accomplished by long-continued and steady xtension.

I would not advise you to divide the ligament of the joint in order to cilitate its reduction; but recollect that you are to give the joint a slight clination forwards to relax the flexor muscles.

After the reduction, the finger should be rolled with tape, and surrounded nd supported with pasteboard, till the lacerated ligaments have united; are being taken to keep the hand and fore-arm in a sling.

The dislocations of the toes are rather more difficult to reduce than the ngers, as the phalanges are much shorter, and the parts less easily moved, rom their being less stiff.

85. A toe or finger is sometimes thrown out of its natural ituation by the flexor tendon and theca, or even the palmar ascia, becoming contracted.

When the thecæ are contracted, nothing should be attempted, as no opeation will succeed; but when a thickened band of fascia appears to be the ause of the contraction, it may easily be divided by a pointed bistoury ntroduced through a very small wound in the integument. The finger should e then extended, and kept in this position by a splint.

DISLOCATIONS OF THE THUMB.

86. The dislocations of the thumb are four in number, and on account of the numerous strong muscles inserted about it, they are very difficult to reduce.

87. *Metacarpal Bone:*—The metacarpal bone is sometimes dislocated from the trapezium; and it will generally be found that it is thrown inwards between the trapezium, and the root of the metacarpal bone of the fore finger.

Considerable pain and swelling are produced by this accident, but it may be detected by the protuberance forward towards the palm of the hand, by the thumb being bent backwards, and not allowing of its being brought towards the little finger.

88. With respect to the reduction of this dislocation, if the bone cannot be reduced by simple extension, it is better to leave the case to the degree of recovery which nature will in time produce, than to run any risk of injuring the nerves and blood-vessels by dividing the muscles or ligaments.

What I have before said respecting the relaxation of muscles inserted into a dislocated part, is particularly necessary to be attended to here. You know that the flexor muscles are more strong than the extensors, and you will, therefore, very much facilitate the reduction by giving the thumb a little inclination towards the palm of the hand; in this manner the flexors may be relaxed, and their resistance diminished. The extension must be steadily continued for a considerable time, as no sudden violence will effect the reduction.

89. A compound dislocation of the metacarpal bone of the thumb is sometimes produced by the bursting of guns; but in these cases, you can easily return it to its natural situation; and,

the flexor tendon should have escaped unhurt, the person may ecover useful motion of the part.

You should bring the integuments together as nicely as you can, confine hem by a suture if necessary, and over this, put a piece of lint dipped in lood, which is the best application; if necessary, you must apply a oultice, but when the bruise has not been considerable, it will heal by the dhesive process.

90. *First Phalanx:*—In the simple dislocation of the first halanx of the thumb, you will find it thrown back upon the etacarpal bone, where it forms a projection; and the lower art of the metacarpal bone projects inwards, towards the palm f the hand.

In this case, the thumb may be brought towards the fingers, but the flexion d extension which are performed between the metacarpal bone and the rst phalanx, are prevented by the dislocation.

91. In the reduction of this bone, as in the last case, the rection in which the extension is to be made, must be attended . The thumb should be bent towards the palm, in order to lax the flexor muscles, and the mode of applying the exten- on is that which I would recommend to be generally adopted in slocations of the toes, thumb, and fingers.

In order to relax the parts as much as possible, the hand should be soaked r a considerable time in warm water, a piece of wetted wash leather is to as closely wrapt round the first phalanx as possible; a tape, about two rds in length, should be fastened on the leather with a knot which will not p, such as the sailors call the clove-hitch. An assistant should now mly press on the metacarpal bone, by putting his middle and first fingers tween the fore finger and thumb of the patient, and thus make counter-tension, whilst the surgeon, assisted by others, draws the first phalanx m the metacarpal bone, inclining it, at the same time, a little towards e palm of the hand.

92. If the efforts made in the way just described, after having

the hand yielding when extension is made. To th
first phalanx, a pulley is to be applied, and exten
generally succeed.

93. With the greatest care and attention,
persevering efforts, you will sometimes fail i
location, where it has been neglected, and m
intervene between the occurrence of the acc
tempts at reduction.

Although this may be the case, no division of the p
the patient will have, after a time, a very useful thu

94. In compound dislocations of the fi
wound is large, and much difficulty is exper
tion, I should recommend the removal of th

I would advise you rather to saw off the extre
injure the parts further by the pressure which wo
dipped in blood should be applied to the wound,
round, and evaporating lotions should be used for
wound is healed. If passive motion be begun early,
be formed.

95. *Second Phalanx:*—A simple disloc

tment must be similar to that for a compound dislocation of
first phalanx.

addition to the sawing off the ends of the bone, you should pare the
of the tendon smoothly with the knife, and if you then bring them
ther, they will unite. Passive motion should be begun at the end of a
ight or three weeks.

DISLOCATIONS OF THE LOWER JAW.

. The lower jaw is subject to two species of dislocation,
omplete and partial.

. *Complete Dislocation:*—When the jaw is completely
cated, both its condyles are advanced into the space between
urface of the temporal bone, and zygomatic arch.

e jaw is known to be completely dislocated, by the mouth being opened,
he patient not being able to shut it by any pressure which you may
on the chin. The lower teeth will be found in a line anterior to the
. You may depress the jaw a little, but to a very inconsiderable
t. The appearance is just that of a person when yawning. The pain,
gh severe, is not attended with danger. The saliva is very much
ased in quantity, in consequence of the irritation of the parotid glands,
t dribbles over the mouth.

. A blow upon the chin when the mouth is widely opened,
cause this accident. Yawning very deeply will also, some-
s, produce the same effect.

0. *Partial Dislocation:*—When the lower jaw is partially
cated, one condyloid process only advances, while the other
ins in the articular cavity of the temporal bone.

his case, the mouth is not so widely opened as in the complete disloca-
but the patient *cannot close it*, from the condyloid process on one side

being advanced under the zygoma; and presents a very ludicrous appearance of the face, from the twist which is given it.

This accident is easily distinguished, by the chin being thrown to the opposite side of the dislocation, the incisor teeth are advanced upon the upper jaw, but are no longer in a line with the axis of the face.

101. *Reduction:*—The reduction of these dislocations must depend on circumstances.

They are generally reduced, by wrapping a handkerchief around the thumbs; placing them on the coronoid processes, and depressing the jaw, you force it backwards as well as downwards, and the bone suddenly slips into its place.

102. In recent cases, this mode will succeed very well, but it is not the plan I would recommend as a general resource.

I should advise you to place some body that will not injure the gums, behind the molar teeth, on each side of the mouth, and for this purpose, I know no better material than two corks, and then raise the chin over them. This practice is very effectual in reducing dislocation, and is less likely to injure the bone or soft parts.

I have also used two forks for the same purpose; having wrapped a towel or handkerchief round the points, I carried their handles into the mouth on each side behind the molar teeth; they were then held by an assistant, and, drawing the chin towards the upper jaw, the bone was easily and quickly reduced.

103. *Imperfect Dislocation:*—An imperfect dislocation of the jaw sometimes happens from a relaxation of the ligaments, something in the same way as that in which the thigh bone is thrown from the semilunar cartilages.

The jaw appears to quit the interarticular cartilage of the temporal bone, slips before its edge, and fixes the jaw, the mouth being, at the same time, slightly opened.

104. In these cases, the natural efforts generally restore the situation of the parts, but I have seen it continue a length of

yet the motion of the jaw, and the power of closing the
ı have returned.

must, in your attempt to return the jaw, press directly downwards;
:h you separate the jaw from the temporal bone, and allow the carti-
replace itself on the extremity of the condyloid process. A snapping
times heard when the bone is returned to its socket.

. Young women of a relaxed muscular fibre are generally
bject of this complaint; and when it has once occurred, the
is easily displaced again from a slight cause, and therefore
ɔtions of it should be limited.

our treatment, you should endeavour to give a general tone to the
ıtion, by the exhibition of ammonia and steel, with the warm bath; a
before the ear will also contribute to remove the disposition to a
ırance of the accident.
will best confine the jaw by making a hole in the middle of a broad
ɔ receive the chin, and split the ends in two parts, bring one over the
the head, and the other over the occiput, and the tendency to subse-
uxation will thereby be prevented.

DISLOCATIONS OF THE OS COCCYGIS.

. Authors mention two kinds of dislocation, to which the
cygis is liable;—the one, inward; and, the other, outward.
.rst is always occasioned by external violence; the second,
· pressure of the child's head in difficult labours.

, difficulty of voiding the fæces and urine, tenesmus and inflammation,
nes ending in abscesses, which interest the rectum, are symptoms,
attend and follow these injuries.

. The best surgeons now regard all schemes for the re-
n useless, as the bone will spontaneously return to its

The introduction of the finger within the rectum, and handling of the injured parts, are more likely to increase the subsequent inflammation, and produce abscesses, than have any beneficial effect. The wisest plan is to be content with enjoining quietude, and adopting antiphlogistic measures.

DISLOCATIONS OF THE HIP-JOINT.

108. As far as I have seen, there are but four dislocations of the thigh bone; viz. upwards, or upon the dorsum of the ilium; downwards, or into the foramen ovale; backwards and upwards, or into the ischiatic notch; and lastly, forwards and upwards, or on the body of the pubis.

Another dislocation has been described by some surgeons, namely, downwards and backwards, but I have never met with a case, and should rather doubt the accuracy of description.

109. *First Dislocation:*—Of the dislocation *upwards*, or on the *dorsum of the ilium;* this happens more frequently than any other dislocation of the hip-joint.

When called to this accident, you must expect to find great extravasation, which will conceal, in some degree, the situation of the parts; but by a rotation of the knee inwards, the head of the thigh bone may be felt, and the trochanter major approaches the anterior superior spinous process of the ilium.

110. The characteristics of this dislocation are, a difference in the length of the limb; a change of position inwards; a diminution of motion; and a flattening of that side by the altered situation of the trochanter major.

You will find the toes rest against the tarsus of the opposite foot; the knee and foot are turned *inwards*, and the knee is a little advanced upon the other; the limb is about one inch and a half, or two inches and a half shorter than the other, and this may easily be detected, by comparing the malleoli erni when the foot is at right angles with the leg. If you try to separate e leg from the other, you find you cannot do it, as the abduction of the ib is completely prevented, but you may bend the thigh a little across the her.

111. This accident may be distinguished from fracture of the ck of the thigh bone, within the capsular ligament, with which is most likely to be confounded, by symptoms which are suffi- ently distinct to a person who is commonly attentive.

In the fracture of the neck, the knee and foot are turned *outwards*, the chanter is drawn upwards and backwards, resting on the dorsum ilii; but e most striking symptom is this, although the limb may be shortened one two inches, according to the duration of the accident, yet by extension, u may restore the natural length of the limb, but the limb is again shortened mediately on your removing the extending force. If, when you have awn down the bone, you rotate it, you can distinctly feel a crepitus, but is ceases to be felt when the limb is allowed to be again shortened.

112. The dislocation on the dorsum of the ilium, is produced the patient falling when the knee and foot are turned inwards, by a blow being received while the limb is in that position.

The following plan is to be adopted in attempting to reduce this disloca- n. Bleed the patient to twelve or twenty ounces, or more if he is a very ong man. Next place him in a warm bath, at 100°, gradually increase it 110°, until he begins to faint. Whilst he is in the bath, give him one grain tartarized antimony, until he feels nausea; then wrap him in a blanket, d place him on a table, between two strong posts, into which two staples ve been fixed; or, if you cannot find a convenient place for this, place n on the floor, and screw two rings, at a convenient distance, into the or.

113. Such is the plan which is usually adopted, but the course hich I take is somewhat different.

I place the patient on a table with a blanket on his back; then a strong t is passed between his pudendum and thigh, and this is fixed to one of the ples. A wetted linen roller should be applied just above the knee, and on is a leather strap is to be buckled, having two straps with rings at right

then wait a little, with the degree of extension you have
the muscles time to fatigue; then draw again gently, and,
complains much, stop again, until the muscles yield; and
find the head of the bone is brought just opposite the ac
same extension be kept up by another person taking the st
and then rotate the limb gently, and the bone will gen
place.

You must not expect to hear a snap when the bone is re
the pullies, the muscles are so much relaxed, that they ca
cient violence; and you can, therefore, only tell if it is r
ing the bandages, and comparing the length of the limb.

If there should be any difficulty in bringing the head o
edge of the acetabulum, you must pass your hand, or m
lift it over the edge of the socket.

When the reduction of this dislocation is effected, you
removing the patient to his bed, as, from the relaxed st
the dislocation would again happen, and that from a ca
you would not suspect it to have occurred.

114. ***Second Dislocation:***—In the dislocation
into the foramen ovale, you must not trust so m
as a diagnostic mark: the increased length of the
rated knees, the bent position of the body, are s
as sufficiently point out the nature of the injury.

nd the head of the bone is situated on the obturator externus muscle, at the nner and back part of the thigh.

115. In this dislocation, if the accident is recent, it is very asily reduced.

Place the patient on his back, separate the thighs as widely as possible, nd place a girt between the pudendum and upper part of the thigh; fix the irt to the staple in the wall, then take hold of the ankle of the dislocated ide, and draw it over the other leg, or, if the thigh be very large, behind e sound limb, and the head of the bone usually slips into the socket. Or he thigh might be secured by a bed-post being received between the pudenum and the upper part of the limb, and the leg be carried inwards, across he other. But the best plan, in general, is to fix the pelvis, by a girt passed ound it, and crossed under that which passes round the thigh, to which the ullies are to be attached, otherwise the pelvis moves in the same direction s the thigh.

116. If the dislocation has existed for three or four weeks, a different plan of reduction must be adopted.

In these cases, it is better to place the patient on his sound side, and fix the pelvis by one bandage, and carry another under the dislocated thigh, to which the pullies are to be affixed perpendicularly; then draw the thigh upwards, and, at the same time, press down the knee and foot, to prevent the lower part of the limb being carried with the thigh, and you thus use the limb as a lever of considerable power. But take care not to advance the leg too much, as the head of the bone would be forced behind the acetabulum into the ischiatic notch, from which it would be extremely difficult to remove it.

117. *Third Dislocation:*—The dislocation *backwards*, or *into the ischiatic notch*, is the most difficult of all the dislocations of the thigh to detect, because the length of the limb differs but little, and its position is not so much changed as respects the knee and foot, as in the dislocation upwards.

In this dislocation, the head of the bone is placed on the pyriformis muscle, between the edge of the upper part of the notch and the sacro-sciatic ligaments. The limb is from half an inch to an inch *shorter* than the other, but usually not more than half an inch, and the toe rests against the ball of the great toe of the opposite foot. The natural prominence formed by the trochanter major, is lost, but it still remains nearly at right angles with the dorsum, but it has a slight inclination towards the acetabulum. Except in very thin persons, you cannot feel the head of the bone, and then only by rolling it a little forwards. The knee and foot are turned *inwards*, but less so than in the dislocation upwards; the knee is only very slightly bent, and therefore is not so much advanced as in that dislocation. The toe touches the ground when the patient is standing, but not so the heel. Flexion and rotation are in a great degree prevented from the limb being so firmly fixed.

118. This dislocation is produced by the knee being pressed inwards whilst bent at right angles with the abdomen, or whilst the trunk is bent forwards on the thigh.

119. The reduction of this dislocation is very difficult, because the head of the bone is placed deep behind the acetabulum, and requires to be lifted over its edge, as well as to be drawn towards it.

Let the patient be laid on a table, on his side, and a girt passed between the pudendum and inner part of the thigh, to fix the pelvis; then pass a wetted roller round the knee, and buckle the leather strap over it; let a napkin be passed under the upper part of the thigh; next, bring the thigh over the middle of the opposite one, and then begin to make your extension with pullies. Whilst the extension is making, an assistant should grasp firmly the napkin at the upper part of the thigh with one hand; and, resting the other hand on the pelvis, he should lift the thigh as much as possible towards the acetabulum, so as to get the head of the bone over its edge. I have also directed a round towel to be used for this purpose; this passed beneath the upper part of the thigh, and then carried over the shoulders of an assistant, who then rests both hands on the pelvis, and, by raising his body gently, raises the thigh with it.

This dislocation has been reduced, by making extension with the pullies in a right line with the body; and, at the same time, this extension was made, the trochanter major was thrust forwards with the hand. The former method is the most easy, and is that which I generally adopt.

120. *Fourth Dislocation*:—The dislocation *on the pubes* is much more readily detected than any other dislocation of the thigh.

n this dislocation, the limb is an inch *shorter* than the other, and the e and foot are turned *outwards*, and cannot be rotated inwards: but the t striking mark is, that the head of the thigh bone may be felt upon the es, above the level of Poupart's ligament, to the outer side of the femoral ry, and feels like a hard ball there, which will readily move on rotating ending the knee.

21. The dislocation in question generally happens in this way: f a person, while walking, puts his foot into some unexpected llow, he throws his body suddenly backwards to preserve his ilibrium, and the head of the bone starts forwards on the bes.

o reduce this dislocation, you place the patient on a table on his side; a carry a girt between the pudendum and the inner part of the thigh, and it in a staple, a little before the line of the body. The roller is to be sed around the thigh, and the pullies fixed as in the dislocation upwards, the extension is to be made in a line behind the axis of the body, the h bone being drawn backwards. After this extension has been continued e time, pass a napkin under the upper part of the thigh, whilst an stant, resting one hand on the pelvis, lifts the head of the bone over the es and edge of the acetabulum.

DISLOCATIONS OF THE PATELLA.

22. The patella may be dislocated in three directions, viz. wards, inwards, and upwards.

23. *First Dislocation:* — The patella is most frequently own on the *external* condyle, and produces there a great jection, and the patient is unable to walk.

t generally happens in those persons who have a little inclination of the e inwards: and is most frequently produced by a person falling with his e turned inwards, and his foot at the same time turned outwards, and the ion of the muscles in the attempt made to prevent the fall, draws the ella over the *external condyle of* the femur.

124. *Second Dislocation:*—The dislocation on the *inner* condyle is less frequent, and happens from a blow on the outer side of the patella, received in a fall on some projecting body.

In the reduction of either of these dislocations, you are to place the patient in a recumbent posture, and let the leg be raised by lifting it at the heel, by which you relax the extensor muscles of the thigh in the greatest possible degree; you then press on that edge of the bone which is furthest from the articulation, and this raises the inner edge of the bone over the condyle of the femur, and it is directly drawn into its proper position by the action of the muscles. Evaporating lotions of spirit and water are to be employed, and afterwards, say in two or three days, bandages should be applied.

125. *Third Dislocation:*—In the dislocation of the patella *upwards*, the ligamentum patellæ is torn through, and the patella is drawn on the upper and fore part of the thigh bone.

The marks of this accident are at once decisive; for, besides the easy motion of the patella from side to side, a depression is felt above the tubercle of the tibia, from the laceration of the ligament. The patient loses the power of bearing on the limb, and a considerable degree of inflammation succeeds.

126. The object of your treatment in this case, is to keep the bone in contact with the ruptured ligament, and to subdue or prevent inflammation by appropriate remedies.

First apply leeches, and afterwards evaporating lotions, from four to seven days: then apply a roller round the foot and leg, and keep them completely extended by a splint behind the knee; then buckle a leather strap above the knee, and to this, let another strap be fastened, which is to be passed under the foot, and buckled to the opposite side of the circular strap. The bone is in this way drawn down to the ruptured ligament, and an union, consequently, takes place. The patient, at the same time, should continue in the sitting posture, so as to relax the extensors of the leg which are inserted into the patella.

OCATIONS OF THE TIBIA, AT THE KNEE JOINT.

. The dislocations of the tibia at the knee joint, are four,
complete, and two incomplete; or, inwards, outwards,
rds, and backwards.

Boyer observes, complete dislocations of the upper head of the tibia
ceedingly rare, because the articulating surface of the condyles of
ur is so extensive, that the tibia cannot be entirely removed from it,
t a prodigious laceration of the ligaments, tendons, and all the rest
soft parts.

First Dislocation:—In the dislocation ***inwards,*** the tibia
ts on the inner side of the joint, and the condyle of the
rests on the external semilunar cartilage.

Second Dislocation:—The tibia is sometimes thrown
e *outer* side of the joint, the condyle of the femur being
l on the inner semilunar cartilage, and the deformity pro-
is just as much as in the first dislocation.

Third Dislocation:—The tibia is sometimes dislocated
rds; in which case the tibia is raised, the thigh bone is
ssed, and thrown rather to one side, sometimes so much so,
compress the popliteal artery.

Fourth Dislocation:—When the tibia is dislocated
wards, the limb is shortened, the condyles of the femur
t, and there is a depression of the ligaments of the patella,
he leg is bent forwards.

Reduction:—Each of these dislocations may be reduced by simple extension, for, as soon as you remove the surfaces of the bones from each other, the muscles give them the direction necessary to be restored to their proper situation.

The grand object, after the reduction, is to avert inflammation of the knee, and to promote the union of the torn ligaments. With this view, a strict antiphlogistic plan must be adopted,—bleeding, leeches, low diet, opening medicines, and a cool evaporating lotion. The limb should be kept perfectly motionless. As soon as the ligaments have grown together, and the danger of inflammation is over, which will be in about three weeks, the joint should be gently bent and extended every day, in order to prevent stiffness.

PARTIAL DISLOCATION OF THE FEMUR, FROM THE SEMILUNAR CARTILAGES.

133. The most frequent cause of this accident, is the person striking his toe against some projecting body when the foot is everted. He immediately feels pain in the knee, and it cannot be completely extended. I have also known it from a sudden twist inwards, when the foot is turned.

The manner in which the accident happens is as follows:—The ligaments uniting the semi-lunar cartilages to the head of the tibia, become relaxed, the cartilages are easily pushed from their situations by the condyles of the femur, which, therefore, come into contact with the head of the tibia. When the limb is attempted to be extended, the edges of the semi-lunar cartilages prevent it.

134. The mode of restoring the parts in this accident, to their natural position, is very clear and easy.

You must bend the limb back, as far as possible, by which you remove the pressure made by the thigh bone, and this enables the cartilage to slip into its place, and the condyles of the femur are again received on the semi-lunar cartilage.

As the accident is very liable to happen again, the return of it is best evented by a bandage made with a piece of linen having four straps at-ched to it, and these are bound lightly above and below the patella.

COMPOUND DISLOCATIONS OF THE KNEE JOINT.

135. I have only seen one example of this kind, which re-ired an immediate amputation; and it is probable that in all iese cases, unless the wound is very small, so as to allow of s ready closure and adhesion, that a similar practice will be xcessary.

DISLOCATIONS OF THE ANKLE JOINT.

136. The dislocations occurring at the ankle joint, are said be four; inwards, outwards, forwards, and backwards, but have never seen one backwards.

The ankle joint is well protected by numerous strong ligaments; the union f the fibula particularly, is so firm to the tibia and the tarsal bones, that it enerally happens that the bone will rather break, than the ligaments ive way.

137. *First Dislocation*:—The dislocation *inwards*, is the ost frequent, and generally happens from a person jumping rom a considerable height, or from running violently with the e turned outwards, the foot being suddenly checked in its otion whilst the body is carried forwards on the foot, and the gaments on the inner side of the ankle give way.

The foot is thrown *outwards*, and its inner edge rests upon the ground; e internal malleolus projects so much against the integuments as to threaten their laceration. The foot easily rotates on its axis. There is also a depression above the malleolus externus, attended with great pain; and about three inches above the lower end of the fibula, a crepitus may be felt.

138. The reduction of this dislocation must be followed up by rest and local applications, to prevent inflammatory symptoms.

To reduce the dislocation, place the patient on a mattress on his injured side, and bend the leg at right angles with the thigh, so as to relax the gastrocnemii; let an assistant grasp the foot, and gradually draw it in a line with the leg. You should, at the same time, fix the thigh, and press the tibia downwards, to force it on the articulating surface of the astragalus. After the reduction, let the limb remain on its outer side in the bent position, with the foot well supported, a many-tailed bandage should be applied, and kept wet with the spirit wash.

The patient may leave his bed, and walk on crutches, at the end of five weeks; friction and passive motion should be used at the end of eight weeks; and twelve weeks will elapse before he has the perfect motion of the joint.

139. *Second Dislocation:*—The dislocation *outwards* is the most dangerous, as it is produced by greater violence, and is attended with more laceration of the ligament, and more contusion of the integuments.

In this case, the foot is thrown *inwards*, and its outer edge rests upon the ground. The malleolus projects very much, and forms such a decided prominence, that the nature of the injury cannot be mistaken. The toes and foot are pointed downwards.

140. In this dislocation, the malleolus internus is obliquely fractured, and the accident happens from the wheel of a carriage passing over the leg, or by the foot being twisted in jumping or falling.

To reduce this dislocation, you place the patient on a mattress, on his back, bend the thigh at right angles with the body, and the leg at right angles with the thigh; let the foot be held firmly by one assistant, and the gh grasped under the ham by another; then extend the foot in a line with leg, and press the tibia inwards towards the astragalus.

The limb should be laid on its outer side, resting on splints with foot ces, and a pad should be placed on the fibula, above the outer ankle, ex-ding a little way up the bone, so as to support that part of the leg. The er treatment will be the same as in the former case. Passive motion uld be used in six weeks.

141. *Third Dislocation:*—The dislocation *forwards*, happens m the body falling backward whilst the foot is confined, or m a person jumping from a carriage in rapid motion, with the pointed forwards.

n this case, the foot appears much *shortened* and fixed, and the toes pointed to the ground. The lower end of the tibia forms a hard swell-on the middle of the tarsus. The heel appears lengthened, and re is a projection before the tendo achillis. The tibia rests on the navi-ar and internal cuneiform bones, the fibula is broken, and carried for-rds at the side of the tibia, and it is fractured about three inches above malleolus.

142. In this dislocation, your treatment of reduction must be lowed up by rest.

n reducing this dislocation, you should lay the patient in bed, on his k; an assistant should grasp the thigh at its lower part, and draw it rards the body, whilst another pulls the foot in a line from the leg, and then push the tibia back, to bring it into its proper place; attending to same rule for relaxation of the muscles and the after treatment as in former dislocation. The patient should afterwards rest the leg on the l, and you should apply splints on each side of the leg, with foot pieces to port the foot at right angles with the leg. In five weeks you may allow patient to get up, and use passive motion, as the fibula will by that time re united.

143. Sometimes the dislocation forwards, is only *partial;* t the treatment is to be the same as in a complete dislocation.

In a partial dislocation forwards, the tibia rests half on the os naviculare, l half on the astragalus; the fibula is broken, and there is not any consi-able projection of the heel. The toe is pointed downwards, and there is great difficulty in putting the foot flat on the ground. The heel is drawn up, and the foot is in a great degree immoveable.

144. *Compound Dislocations:*—Compound dislocations of the ankle joint may take place in the same direction as the simple, and the bones and ligaments suffer in the same way.

Great local inflammation and constitutional disturbance attend these accidents, on account of the wound made into the joint, and the great efforts required to repair it.

145. The principle of treatment to be observed in these dislocations, is to close the wound as completely as possible, to assist nature in the adhesive process by which the wound is to be closed, thus rendering suppuration, and granulation less necessary for the union of the opened joint.

The reduction is to be effected in the same manner as I have before described in simple dislocations. Apply a little lint dipped in blood to the wound, put on a many tailed bandage, which is to be kept wet with spirits of wine and water, and the lint should rest on the outer side. But in the dislocation outwards, it is best to keep the foot on the heel, with a splint and foot piece on the outer and inner side of the leg. The knee should be slightly bent, and care taken that the foot does not become pointed.

FRACTURES.

1. Fracture is a term used by surgeons, to express the division of a bone into one or more pieces, from violence.

2. Fractures are either *simple* or *compound;* according as they are accompanied with an external wound, communicating with the ends of the bones, or otherwise.

If the bone is broken in two or more pieces, and there is not an external wound, communicating with the fractured edges of the bone, the fracture is till called *simple;* and on the other hand, if the bone is broken in but one lace, and there is an outward wound, the accident is termed a *compound* racture.

Large wounds may occur at the same time with fractures, but unless these ommunicate with the bone, they are not called compound fractures.

3. Fractures are, likewise, said to be *complicated,* when they re attended with diseases, or accidents, which render the indiations in the treatment more numerous, and require the emloyment of different remedies, or the practice of sundry operaions, for the accomplishment of the cure.

Thus, fractures may be complicated with severe degrees of contusion, ounds of the soft parts, injury of large blood-vessels, a dislocation, or iseases, and particular states of the constitution, as the scurvy, rickets, es venerea, pregnancy, &c., which are said to retard the formation of allus, and render the cure more backward.

4. The immediate result of a fracture is the escape of extraasated blood, which in simple fractures becomes absorbed; and he effect which a fracture produces on the constitution, is to set up a violent reaction, so as to bring about a restoration of the njured part.

The degree of this effort of the system will very much depend on the maner in which the accident is treated; for if you are careful in the managernent of the case, you may procure adhesion of the external wound, and hus reduce the accident to the state of a simple fracture.

5. The mode of union in fractures is ultimately the same, but n simple fractures, ossific matter is deposited in cartilage *without* a suppurative process, and in the other *with* it.

If you do not procure union by adhesion, it is brought about by granulaion, and in the following way: The blood which is at first poured out in onsequence of the division of the vessels of the medullary membrane, and he periosteum, instead of being confined in the surrounding structures,

passes off by the external wound; yet it must be reme
effused blood has no share in producing union of the ends o
becomes after a few days entirely absorbed. Next, there
out between the periosteum and the bone, which separat
from the surface of the bone for about an inch, or an inch a
the place where the bone is fractured. This fluid does not c
of the vessels of the periosteum, but rather an elongation o

Now here is the difference between the simple and compo
in the former, the fluid, after accumulating for a day or t
great measure taken up by the absorbents, and adhesive ma
in its stead; but in the latter, a suppurative process is esta
nulations arise from the broken surfaces. In these granu
becomes deposited, and continues to be formed for some tim
of pus gradually diminishes, and in a compound fracture, c
to be formed until about the twentieth day. It is deposited
ternal surface of the periosteum and the external surface
the place where the bones are brought into contact, the pe
absorbed, and cartilage is deposited between them, in whic
matter are formed, and these, when completed, are covere
of the original periosteum.

6. The cause of non-union in fractures, is th
proximation.

If the fractured ends are not brought into contact, the
raised, the cartilage that forms does not cover the extremi
and the protruding portions are removed by the absorbe
process of union only goes on in those surfaces of bone
in contact.

7. Compound fractures are much slower in th
union than simple fractures; and the union is
tarded by exfoliations of bone, which will often tak
time to separate, and keep up considerable consti
tion.

Under the granulations arising from the cancellated struc
also found, and about the twelfth day in simple, and from
to the twentieth day in compound fracture, there are bony
in the cartilage; and it is by the accumulation of these pa
union gradually takes place.

From three to nine or twelve months is the grade of time required for the complete union of compound fractures.

8. *Causes:*—The causes of fractures are divided into *predisposing* and *remote*.

9. In the first class are comprehended, the situation and functions of the bones, the age of the patients, and their diseases.

Superficial bones are more easily fractured, than those which are covered by a considerable quantity of soft parts. In respect to functions, some bones are more likely to be fractured than others; thus, the clavicle, which serves to keep the shoulder in its proper situation, and support on its arched extremity all the motions of the upper extremity, is particularly subject to be broken. The gradual increase of the phosphate of lime, in the structure of bones, makes them brittle in proportion as we advance in years. Lues venerea, arthritis, cancer, rachitis, scurvy, scrofula, and a few other diseases also predispose to fracture.

10. The remote cause of fractures is external force.

This may result from falls, blows, &c., or in particular instances, from the violent action of the muscles which are attached to the injured bone; which, in fact, is always the case with a fractured patella.

11. *Symptoms:*—Some of the symptoms of fractures, are nearly conclusive; while on the other hand, many are very equivocal.

The pain and inability to move the limb, commonly enumerated, may arise from a mere bruise, a dislocation, or other cause. The crepitus, the separation and inequalities of the ends of the fracture, when the bone is superficial; the change in the form of the limb; and the shortening of it; are circumstances communicating the most certain information. The *crepitus*, however, though the principal demonstration of fracture, also occasionally attends on dislocations, arising from a change in the quality of the synovia.

12. *Prognosis:*—The prognosis of fractures, varies according to the kind *of bone injured*, what part of it is broken, the direc-

tion of the breach of continuity, and what other miscl
plicates the case.

Fractures of bones, which have many strong muscles inserted
are ,the more difficult to cure; a fracture of the middle part of
is less dangerous, than a similar injury near the joint. Whe
fractured in several places, the case is more serious, and the
cure much augmented. But, the accident is still worse, when a
tured in two different places at once; as, for instance, in the thi
Oblique fractures are more troublesome, and difficult of cure,
verse ones, because an oblique surface does not resist the retrac
lower portion of the broken bone; and, consequently, it is very
keep the ends of the fracture duly applied to each other. Co
complicated fractures are more troublesome than simple ones.
debility, also, are unfavourable attendants on fractures.

13. *Treatment:*—The general treatment of fractures
three principal indications.

The first is to reduce the pieces of bone into their natural situ
second is to secure and keep them in this state. And the third i
any unpleasant symptoms likely to arise, and to relieve them
have come on.

14. First:—The means employed for the reduction o
in general are chiefly three; viz. *extension; counter-*
and *setting.*

15. It was formerly recommended to apply the
force to the *lower* fragment, and the counter-extensi
upper one.

Such practice, indeed, was advised by Mr. Pott, and is stil
preferred in this country; but the French surgeons apply th
force to that part of the limb, which is articulated with the low
and the counter-extension to that, which is articulated with the

16. It is difficult to lay down rules respecting th
degree of force which should be used in making extensi

This must vary in different cases, according to the species of displacement, and the number and power of the muscles of the part. The extension must always be gradual, and should be begun in the direction of the lower fragment, and be continued in that which is natural to the body of the bone.

17. In every case of fracture with displacement, as soon as the necessary extension has been made, you must endeavour to place the ends of the broken bone in their natural situation: this is termed *coaptation* or *setting*.

Here the grand means of success is putting the limb into such a position as will relax the most powerful muscles, which oppose the reduction.

18. Secondly:—After the bones have been put into their natural situation, you must adopt such means as will keep the fracture reduced.

The means you are here called upon for the fulfilment of this indication are—an advantageous position; quietude; bandages; splints; and various kinds of apparatus.

19. Thirdly:—After having reduced the fracture; applied a suitable apparatus for maintaining the reduction; and put the part in an advantageous position, you must then attend to the third indication, viz. the prevention and removal of any unfavourable symptoms.

This indication more immediately comprehends diet, local applications, and the other necessary steps of after-treatment.

20. With the exception of a few simple fractures of the upper extremity, it is proper, in all cases, to allow for the first few days only very low diet.

Broths, tea, and so on. The patient should also be permitted to drink as often, and as much as he likes, of any cooling acid beverage. The low diet is only to be continued for a few days, unless great inflammation arises.

The emplastrum saponis is the best for all simple fr
rally speaking, a good plan, for the first two or th
bandages with cold water; for, in this way, the tendenc
swelling is considerably lessened. You should recolle
bandages shrink when wetted, and may become so ti
not attended to.

22. When the callus has acquired some fir
should still keep the part or limb quiet, u
perfectly consolidated.

And, in fractures of the lower extremity, even aft
ceeded so far, that the splints admit of being left off,
to venture to get out of bed, or bear upon the limb, t
have elapsed.

23. All fractures, however simple and wel
be, are constantly followed by weakness an
limb.

For the prevention of these effects of fractures, pas
cautiously performed when the union is perfect. Y
friction, liniments, emollient relaxing applications, co
ing: but, sometimes, notwithstanding these remedies,

This may be very easily done by relaxing the muscles acting upon the limb. Bring them as nearly into apposition as possible, and, if there be slight hemorrhage, do not be searching for a small vessel, but place a little lint over the wound, and by making gentle pressure on it, you may easily suppress the hemorrhage. Next bring the integuments together as neatly as you can, and dip a dossil of lint in the blood, and put it on the surface of the wound. In this way, the wound unites by the adhesive process, and the union of the bone goes on as in simple fracture, and is cured in one-fourth part of the time which would be required if the wound were allowed to be filled by granulations.

25. Such should be the principal object of your treatment under ordinary circumstances, but if the fracture is accompanied with severe contusion of the soft parts, a somewhat different course must be adopted.

You must apply a poultice in these cases, in order to facilitate the discharge from the wound, and promote the separation of the parts to be removed; for the parts must slough, and therefore it would be useless to attempt to procure union by adhesion.

26. If in compound fracture, the wound is caused by the ends of the bone or any sharp instrument, you may generally succeed in procuring an adhesion as already directed.

Do not apply adhesive plaster, as it frequently produces erysipelas on the edge of the wound, but use the lint as before recommended; it is the least irritating application I know of, and appears to approach the nearest of any other to the natural covering of the parts.

27. The subsequent steps of your treatment must consist of the application of bandages, evaporating lotions, and splints.

Apply the many-tailed bandage loosely, so that it may give way to the tension that follows, and evaporating lotions over this.

Splints should afterwards be put on; those made of wood are the best, and one should be put on each side of the limb. Do not apply the splints tightly at first, so as to cause pain, but see that they are well padded, and the bones nicely adjusted.

28. It often happens, when a fracture has been thus treated, that in a few days inflammation arises, and a discharge of pus follows.

When this is the case, the lint which was at first applied should be partly removed, and the matter allowed to discharge. If the matter should be small in quantity, after you have let it out, replace the lint carefully, and do not apply a poultice, but continue the use of the cold wash. If, on the other hand, the discharge of matter is considerable, or if it is a contused wound, with a tendency to slough, then you should apply fomentations and poultices, and heal the wound by a granulating process.

29. The *position* of the limb must be the same in compound as in simple fracture; with this exception, that if the suppurative process should be set up, the wound will require dressing, and therefore it will be necessary to have the limb in a convenient position for that purpose.

30. *Constitutional Treatment:*—The constitutional treatment required in compound fractures, will be regulated by the force of the symptoms.

If the patient be young and plethoric, take blood from the arm sufficient to allay the constitutional suffering, but do not give purgatives, as they very much disturb the patient, and add to the irritation, by the necessity which there is of his being frequently removed. Nothing is so bad in the treatment of compound fractures as the frequent changing of the positions and dressings of the patient: it is a state of rest which is necessary for the recovery of the parts, and therefore the less they are disturbed the better. Give opium to quiet the irritation, and give also, at the same time, the saline mixture, with the liquor antimonii tartarizati, to keep up the secretion of the skin.

31. *Difficulties in Treatment:*—And first of the difficulty which now and then exists in the *reduction* of the bone, which occasionally arises from a portion of skin being nipped under the projecting extremity of the bone.

When you try to extend the limb, you find you cannot bring the skin into its place. If this projecting portion of bone is not large, make an incision through the integuments, and turn them to one side sufficiently to reduce the bone, and afterwards try to unite the parts by the adhesive process.

32. When you experience any difficulty in the reduction of a fracture which is very *oblique*, do not divide the integuments; but saw off the sharp projectious of bone at the extremities of the fractured portions, and then carefully replace the bone in its proper situation.

The muscles will draw the ends of the bone together, even if it be shortened. Do not adopt this practice, however, where there are two bones, and one is not fractured, for if the broken or the sawn surfaces are not brought into contact, no ossific union can take place.

33. If the bone in fractures should be *very much shattered*, and several pieces be detached and loose, remove them, but with the greatest possible care, so as to avoid irritating the wound more than is absolutely necessary.

If these portions of bone be not removed, they will produce excessive irritation, and will very much retard the healing of the wound by frequent exfoliations. But if the pieces be large, do not detach them, for if they be connected by periosteum, they will again unite; or if there be one large piece, and the periosteum on it is entire, let it remain.

34. Compound fractures are often attended with *hemorrhage from large* arteries, which have been wounded by the broken extremities of the bone.

It was formerly the practice to amputate in these accidents, whenever any vessel of importance was wounded, under the supposition that the injury could not be repaired, and that gangrene would in all probability happen. But I have seen so many limbs saved, even when the principal artery going to the limb has been torn, that I am induced by experience to adopt a different plan.

The introduction of extraneous bodies into wounds, to suppress hemorrhage, is wrong in compound fracture, as they produce too much irritation, and do not effectually answer the proposed object. It is better in some cases, in which you have great difficulty to secure the vessel at the wound, not to twitching and pulling, and continually irritating the wound, and frequen to no purpose, but to cut down at once on the artery, in its course to the pa

35. Another untoward circumstance to the welfare of co pound fractures, is *a high degree of inflammation* attacking t neighbouring part.

If the patient's health is good, the inflammation will not extend beyo few inches around the accident; but if the patient is irritable, and the inj for example, be in the leg, the inflammation will extend along the cours the absorbents to the groin, and if there be effusion at the same time acc panying this, it must be considered as an indication of great danger.

36. The symptoms of great inflammatory excitement, gener make their appearance in persons who have lived irregula either as regards their diet, or their habits.

Such symptoms must not be treated very actively by depletion; ap leeches, fomentations also, and poultices, to the neighbourhood of the wo Lotions also of the liquor ammoniæ acetatis, with rectified spirits of w should be applied to the inflammation on the limb, whilst the poultices applied to the neighbourhood of the wound. At the same time, op should be given to allay the constitutional irritability, and a ge diaphoresis promoted on the skin, by giving some saline medicines.

Be very cautious about the administration of purgatives, as they dis the patient very much; but, if absolutely necessary, give an enema.

37. Another obstacle met with in the treatment of compo fracture, is an excessive *spasmodic action* of the muscles.

This action is sometimes so violent, as to render all your attempt overcome it absolutely nugatory. Amputation is at once required in a c of this kind.

38. It is sometimes necessary to amputate from *a wan* *union* between the fractured ends of the bone.

Non-union, I am inclined to think, is generally the result of fract occurring at the period of parturition. I also believe it is sometimes result of continuing cold applications for too long a period to the part, thus checking that degree of inflammatory action which is absolutely necessary to bring about a restoration of the parts.

39. If these cases are properly managed, it is not always necessary to amputate; you may give the patient a chance of saving the limb.

The ordinary treatment in these accidents is, to bandage the limb firmly, buckle on a case of firm leather over the limb, and carefully adjust a splint on each side of it, so that no lateral motion may be allowed. If it should happen in the leg, let your patient walk about on crutches, so that by making pressure on the ends of the bone, you may bring on a sufficient degree of inflammation to throw out adhesive, and afterwards ossific, matter.

Mr. Aymesbury's splints will be found very useful in the treatment of these cases.

40. It has been recommended to amputate parts which have been injured by compound fracture, when *tetanus* makes its appearance.

I advise you never to amputate in these cases, but to put some of the extract of opium, liquefied by the addition of a little water, into the wound. I have known this succeed when large doses of musk and opium have been taken without producing any effect.

41. To the question, when is the most proper time to operate in compound fractures, supposing the operation to be necessary? I should say, that all the circumstances before mentioned being taken into account, if it will be necessary to amputate in a few days after the accident, then, the sooner it is done the better.

If you amputate at one hour after the accident, the patient will do better than if you leave it twelve hours; for this reason: if you amputate immediately, the constitution has but one shock to sustain, and, in general, rallies much better than when the amputation is delayed; but if you leave it eight or twelve hours, there is a great degree of irritation previously set up. The loss of blood is rather a favourable circumstance than otherwise to precede an operation.

42. The persons on whom operations for compound fractures succeed the least, are such as are loaded with adipose matter.

In these persons, if you leave the limb, the constitutional excitement runs so high, that it generally destroys life, and if you amputate, they frequently die in twenty-four hours after the operation, from the constitution being unable to bear the shock which the operation produces.

FRACTURES OF THE NOSE

43. The bones of the nose from their situation, are much exposed to fractures. The fragments are sometimes not deranged; but, most frequently, they are depressed.

In order to replace them, you must pass a female catheter, a ring-handled forceps, or any such instrument, into the nostrils, and, using it as a lever, push the fragments outwards; while, with the index finger of your left hand, you prevent them from being pushed out too far. In general, they will retain their situation without any further assistance; if not, the fractured portion may be supported by the introduction of lint.

FRACTURES OF THE JAW.

44. The lower jaw is subject to simple and compound fractures; but, whether the one or the other, the displacement is readily reduced.

By introducing one or both thumbs into the mouth, and by depressing or keeping stationary the posterior part of the bone, at the same time that you elevate or bring forwards the anterior part with the fingers, you can, in general, replace the fracture with great facility.

45. The *retaining* it in its situation, and the preventing it from moving, are points not quite so easily accomplished as the replacement.

The parts being accurately replaced and kept firm by an assistant, a thick mpress of lint should be placed over the seat of the fracture, and a bandage plied, by means of which the jaw may be firmly held upwards and back-rds; and for this purpose, the most effectual is a bag or purse, to receive e chin, with four strong tapes, or ends, attached to it; the two inferior of hich are to be tied over the parietal bone, the two superior over the oc-put.

46. During the cure, the patient should be kept quiet, and fed on spoon meat.

This diet should be continued till the bone is firmly united, and may be ven by means of a small spoon introduced between the teeth. Broths, ups, jellies, tea, and other slops, appear most eligible.

47. Compound fractures of the lower jaw are to be treated on e same principle as similar injuries of other bones.

If possible, the external wound should be healed by the first intention; d, when this attempt fails, care must be taken to keep the wound clean by anging the dressings about once in three days; but not oftener, lest the acture suffer too much disturbance.

FRACTURES OF THE CLAVICLE.

48. In accidents of this kind, the shoulder is usually drawn rward, and that portion of bone which is attached to the ster-um, projects over the other fractured extremity, and may be stinctly felt by tracing the usual course of the clavicle with the nger.

Generally speaking, the fracture of the clavicle is single, that is, it con-sts of one fracture only; but in the case of a violent blow, the bone may broken at more than one place; and there may be great echymosis of the rrounding parts.

49. It is very easy to reduce a broken clavicle; but the diffi-

culty rests in retaining the fractured ends in exact apposition, so as to produce an union in which there is no deformity.

What you have to do is this:—The arms and shoulders of the patient are to be firmly drawn backwards by an assistant; when the fractured extremities of the bone immediately come in apposition. The parts are then to be covered with an adhesive plaster, and a bandage is to be applied to retain them in their reduced situation; that called the stellate is usually employed; it is a single-headed roller of moderate breadth, and is applied by making it to pass under the axilla of one side, and over the shoulder of the opposite, describing on the back the figure 8. It should be drawn with considerable tightness, and the arm should afterwards be supported with a sling.

FRACTURES OF THE STERNUM.

50. A fracture of the sternum is rendered evident by the inequalities perceptible when the surface of the bone is examined with the fingers.

It is also characterized by a depression or elevation of the broken pieces; a crepitus, and an unusual mobility of the injured part in respiration; by the breathing being difficult, and almost always accompanied with cough, spitting of blood, palpitation, and inability to lie on the back.

51. Fractures of the sternum, when mere solutions of continuity, only require common treatment.

A piece of soap plaster should be applied to the situation of the injury, a roller round the chest, quietude, bleeding, and a low diet, with a view of preventing what may be considered as the most dangerous consequence, inflammation of the parts within the chest.

52. In cases, attended with great depression of the fractured bone, it may become necessary to elevate it.

The necessary incisions should be made, in order to raise with an elevator the portions of the bone driven inward, or to extract with forceps any

e splinters, which seem to be similarly circumstanced. However, it is
often necessary to trephine the sternum, either to raise a depressed por-
of the bone, or to give vent to extravasated fluid.

FRACTURES OF THE RIBS.

3. Fractures of the ribs are much more common than those
he sternum.

hen these take place at the anterior part, or sides of the chest, the acci-
t is generally easily recognisable by putting the hand where the violence
been received, or where the patient says there is considerable pain. The
ements of the chest produce a sensible grating, or crepitus, and the pa-
t experiences great pain from the motions of the broken ends of the bone
e chest. When, however, the fracture is situated in the lower ribs, and
her back where the ribs are covered by thick muscles, we often do not
eed in detecting grating or crepitus, although all other circumstances are
ent which lead us to believe the existence of the fracture. In a doubtful
like this, it is better to adopt the treatment suitable to fracture of the
.

4. The fracture of a single rib is by no means an important
urrence; for the patient readily recovers on a simple treatment
his case.

n adhesive plaster, or the ceratum saponis, should be applied over the
, and the body should then be tightly encircled with a broad bandage.

5. Should the extremity of the fractured rib puncture the
gs, an effusion of air into the cellular membrane will take
e (called *emphysema*); and sometimes will extend to the
p, the eyes, and downwards, along the aldomen, to the lower
remities.

such cases small scarifications with the point of a lancet are required;
if there be symptoms of fever, or inflammation, bleeding and other anti-
gistic *regimen*.

FRACTURES OF THE SCAPULA.

56. The scapula is so much covered by muscle, nexions with the trunk are of such a kind, as to allo ing under the application of external force, so that uncommon.

Some parts, however, which are placed nearest the surfa and which project particularly, may be broken; the *acrom* the *inferior angle* of the scapula, and more rarely the *co* and *the neck* of the bone.

57. Now, as for the treatment for fracture of the of the bone, the acromion and coracoid processes, be said.

All that you can do, says Mr. Lawrence, in these cases, upper extremity at rest; for when that moves, the scapula and you may perhaps, in some measure, assist the maintenanc of the broken fragments, and the consolidation of a fracture, tion (through the peculiar position of the upper extremity) muscle connected with the broken part of the bone, or by th some local compress.

58. The neck of the scapula is suspected by som quent accident; but by Boyer, Lawrence, and others be a rare accident.

Your treatment in this case, consists in keeping the head o outwards, by means of a thick cushion in the axilla; in keep cavity and arm raised with a sling; and in preventing all mo by binding it to the trunk with a roller.

FRACTURES OF THE HUMERUS.

59. The humerus may be fractured at any point of its length: rom the head down to the inferior articular extremity.

60. *Fractures of the Neck:*—Are not very easily ascertained, nd, from want of attention, have been frequently confounded ith luxations of that bone.

When the neck of the humerus is fractured, a depression is observed at e upper part and external side of the arm, very different from that which ccompanies the luxation of the bone downward and inward. In the latter ase, a deep depression is found, just below the projection of the acromion, the natural situation of the head of the humerus; whereas, in fracture of e neck of that bone, the shoulder retains its natural form, the acromion oes not project, and the depression is found below the point of the shoulder.

61. In this case, to support the weight of the limb, and keep firmly fixed to the side, are the most effectual means of main-ining the apposition of the broken bones.

It may happen, if the situation of the fracture be low, so that you can feel e exact spot, you may assist the apposition of the fragments, by placing a mpress in the axilla, and drawing the upper part of the extremity down-ards, inwards, or forwards; or even by applying a compress externally. here are minute points which must be judged of in every particular case.

62. *Fracture of the Shaft:*—As we have the whole of the ody of the humerus immediately under our observation, the xistence of fracture is easily ascertained.

The head of the bone being grasped with one hand, and the elbow with e other, upon rotating the arm, no motion will be communicated from the wer to the upper portion, and at the same time a crepitus will be distin-ishable.

63. The reduction of these cases is very easy, and
tenance in apposition is readily secured.

In other fractures of the kind, it is usual to apply two pieces of
ter, which together surround the limb, at the situation where t
has happened. Extension, if necessary, being now made by a
who at once draws the lower portion of the bone downwards, and
elbow, the surgeon is to apply a roller round the limb, and th
The external splint is to extend from the acromion to the outer c
being lined by a soft pad, the wood cannot hurt by pressure. T
splint is to reach from the margins of the axilla to a little belo
condyle, and is to be well guarded with a pad, filled with tow,
material. Mr. S. Cooper recommends four splints; one on the c
on the inside, one on the front, and another on the back of the a
are to be carefully fixed in their respective situations by means of
Throughout the treatment, the elbow and whole of the fore-a
quietly and effectually supported in a sling.

64. *Fracture of the Condyles:*—The humerus may
at its lower part, the fracture extending through the co
the joint.

When the condyles of the humerus are obliquely broken off, ju
joint, the appearances are those of a dislocation of the radius and
wards; but the nature of the case is evinced by the circumstance
placement recurring, as soon as the extension is stopped, and
crepitus, generally perceptible, when the fore-arm is rotated u
merus.

65. Your principle of treating these cases, consists i
the arm, drawing it forwards so as to reduce the parts,
applying a roller.

The best splint for the purpose, is one formed at right angle
portion of it being placed behind the upper arm, and the low
fore-arm. A splint should also be applied to the fore part of the
The splints are to be fixed with straps; evaporating lotions us
arm kept in a sling. In a fortnight, if the patient be young, an
weeks, if he be an adult, passive motion may be gently emplo
purpose of preventing an anchylosis.

66. Compound fractures of the elbow joint, generally happen through the internal condyles of the os humeri, and the fracture takes an oblique direction into the joint.

67. In the most severe accidents of this kind, the constitution is generally able to support them, if they are judiciously managed.

In all cases of this accident, the arm should be kept in the bent position; for as anchylosis in a greater or less degree will be the consequence, it is attended with much less inconvenience in this position than in any other. Now rather than submit your patient to an amputation, endeavour to heal the wound, by bringing the integuments together, and thus make the case a simple fracture. If a contrary practice is adopted; if poultices, for example, are applied, the adhesive process is prevented, and suppuration produced, which puts life in danger, or renders amputation necessary.

If the bones be very much comminuted and the wound large, all the detached portions of bone should be removed; but in old people, when much injury is done, there is often not sufficient strength to support the suppurative process, and amputation should be recommended.

Even if suppuration should take place in these accidents, it will not be absolutely necessary to amputate, unless any thing should afterwards happen.

FRACTURES OF THE FORE-ARM.

68. The bones of the fore-arm may be both broken together, or they may be fractured separately.

The existence of a fracture of these bones may be ascertained in the same manner as directed for discovering a fracture of the humerus; or by tracing the course of the bones with the finger along their inferior surface.

69. A similar treatment is also required as in a fracture of the humerus.

The splints should be laid, one on the inside, the other on the outside of the arm; so that both bones may be at once effectually compressed; that on the inside should be long enough to reach the palm of the hand, by which means the wrist will be kept steady, and the radius will be prevented from rolling. They may be confined either by the application of a bandage, or by tying them with broad tapes or riband.

FRACTURES OF THE WRIST JOINT.

70. A compound fracture extending into the wrist joint is a very serious accident, when the radius is much comminuted; but it is an injury which does very well when the radius is broken without being much shattered.

If you should meet with a case of this kind, it would be proper, when torn pieces of bone can be felt at the extremity of the radius, that the wound should be enlarged for their removal; and instead of fomentations and poultices being used, that the wrist should be surrounded by lint dipped in the blood, and a roller loosely applied. The arm should be supported on a splint, so as to keep it perfectly free from motion; evaporating lotions should be applied, and the limb should not be disturbed unless the patient has symptoms of a suppurative process, when a small opening should be made in the bandage to allow of the escape of pus, but still the bandages should be allowed to remain.

71. If there should be much inflammation or constitutional irritation, you must have recourse to appropriate measures for reducing it.

You should take blood from the arm; and apply leeches occasionally. The bowels should be gently opened, but all active purging avoided.

72. If your attempts of reducing inflammation should prove unavailing, and the suppurative process comes on, and extends up the tendons of the fore arm, it will be necessary to amputate.

The operation should not be performed where the tendons are loose in the arm, but further up, in the muscular part of it; you will otherwise have a sloughy irritable stump.

FRACTURES OF THE CARPUS, &c.

73. *Carpus:*—The bones of the carpus, when broken, are usually crushed, as it were, between very heavy bodies, or torn by violence; and are commonly followed by severe and troublesome symptoms.

When an attempt is to be made to save the part, the chief indications are to extract splinters of bone, and prevent inflammation, abscesses, and mortification. The parts may at first be kept wet with a cold evaporating lotion, any wound present being lightly and superficially dressed; but, afterwards, as soon as all tendency to bleeding is over, emollient poultices may be put over the dressings instead of the lotion. The dressings themselves, however, should not be removed for three or four days, all unnecessary disturbance of the crushed part being highly injurious. Should abscesses form, early openings should be practised, so as to prevent the matter from extending up the fore-arm. Duly supporting the hand and fore-arm in a sling is of the greatest importance.

74. *Metacarpus:*—A fracture of a metacarpal bone is generally produced by violence applied directly to the part.

Mr. Lawrence observes, that fractures of the metacarpal bones of the fingers or thumbs, must be treated by keeping the hand in a state of rest. When the hand is very badly crushed, amputation is indicated.

75. *Phalanges:*—Fractures of the phalanges of the fingers and thumbs sometimes require attentive treatment.

It consists in applying a piece of soap plaster, rolling the part with tape, covering it in pasteboard, sometimes placing the hand on a flat splint, or finger board, and always keeping the hand, fore-arm, and elbow, well supported.

FRACTURES OF THE THIGH.

76. If the fracture is in the thigh, it should be placed over a

double inclined plane, with a splint on each side; that on the outside, should reach from the trochanter beyond the knee; and both in this and the former fracture, you should keep the ball of the great toe in a line with the inner side of the patella.

I do not like the extended position of the limb, because the muscles are put upon the stretch, and there is danger of a shortening of the limb ensuing. This was the practice about fifty years ago.

A compound fracture of the femur generally does better than a compound fracture of the leg, because the bone is so much surrounded by muscle, that the wound made is much more easily closed, and is not therefore followed by the same degree of suppuration.

77. Of the *fracture which happens at the upper part of the thigh bone*, there are three distinct species, very different in their nature and result.

First, where it happens through the neck of the bone entirely within the capsular ligament. Secondly, through the neck at its junction with the trochanter major, by which the trochanter is split, and the upper piece is driven into it. Thirdly, a fracture through the trochanter major, beyond its junction with the cervix.

78. *First:*—Of the *fracture within the ligament*, and this is an accident which always happens to persons of advanced years; young persons never have it; and it more frequently occurs with women than with men.

Under this accident, the leg is from one to two inches *shorter* than the other; the foot and knee are *everted*. There is little pain when at rest in the recumbent posture. But on rotation, a pain is felt, from the rough end of the bone grating against the synovial membranes lining the capsular ligament. The thigh may be perfectly extended, but flexion is more difficult, and attended with pain, this is increased if the thigh be directed towards the pubes, and lessened if carried outwards. A crepitus is also discoverable when the limb is drawn down, so as to be of the same length as the opposite one, and then rotated, but not so when the patient is lying on his back, with the limb shortened.

79. On the first sight of a patient, then, there are two things

that will particularly strike your attention; the *shortening* of the injured limb, with an *eversion* of the foot and knee.

Now in the dislocation of the femur upwards, the head and neck of the bone prevent the trochanter from being drawn downwards, whilst the neck of the bone being shortened by the fracture, readily admits of it, and this is the reason why the limb is *inverted* in the one, and *everted* in the other. The limb has been found inverted in this fracture, but it is a very rare occurrence.

80. This fracture rarely happens under fifty years of age, and the dislocation seldom at a more advanced period. But the most common period at which the fracture occurs, is between fifty and eighty.

The slightest cause often produces this fracture, from the bones in old persons having undergone the change peculiar to age; and the way in which they usually happen is from the person slipping off a pavement, and though it is only the descent of a few inches, the unexpected shock acting perpendicularly on the cervix, with the advantage of a lever, produces a fracture. The patient immediately falls, and the accident is, frequently, improperly attributed to this one circumstance. Even turning suddenly round has produced it.

81. The union of this fracture has been the cause of much difference of opinion. It has been said, that these fractures unite like fractures in any other part of the body, by bone; but it is my firm opinion, that fractures of the neck of the thigh bone, of the patella, olecranon, coronoid process of the ulna, and condyles of the os humeri, unite by *ligament*, and not by bone.

In all the examinations which I have made of transverse fractures of the cervix femoris within the capsule, I have had my opinions confirmed, as I have not met with a single instance in which bony union had taken place. I would not maintain its impossibility, but what I wish to be understood to say is, that, if ever it does happen, it is an extremely rare occurrence, and that I have never yet met with a single case.

82. There are *many reasons* which may be assigned for the

want of ossific union in the transverse fracture of th
within the ligament.

83. The first reason is, the want of the proper *app*
the fractured ends of the bone.

It is scarcely possible to preserve the parts in apposition, eve
hours, and the slightest change of position produces an instant
of the large and powerful muscles passing from the pelvis to th
that the ends of the bone become immediately displaced.

This is also the case in fractures of the patella, where, notw
all your efforts to prevent the retraction of the muscles, it
happens that you can succeed in supporting a complete approxim
bones.

84. The second reason for a want of bony union is,
of pressure of one bone on another.

Even if the limb were preserved at its proper length, and a
capsular ligament not to be torn, this circumstance would operat
an ossific union. There is a large quantity of synovial fluid s
the joint, this distends the ligament, and entirely prevents th
the bones. After a time, this fluid becomes absorbed, but not
flammatory process has ceased, and ligamentous matter has been
the joint from the surface of the synovial membrane.

85. The third and principal reason of the want of os
is, the almost entire absence of ossific union in the h
bone, when detached from the cervix.

The natural supply of blood for the neck and head of the bon
from the periosteum; and when the neck is fractured, and the
torn through, the means of ossific action are necessarily cut
posit of cartilage or bone, as in other fractures, is produced,
a deposition of ligamentous matter covering the surface of the
structure.

In dissection of these accidents, you find that the cancelli
firm and smooth by friction, as in other bones which rub on each
their articulating cartilages are absorbed. Portions of bone rem
by ligament, or are loose and floating in the joint, covered by
matter; but these do not excite inflammation any more than

are found in the knee or in the elbow joints. The capsular ligament, e synovial membrane are very much thickened, from the inflammation they have undergone, and are therefore very much strengthened. membrane is sometimes separated from the fractured portions, so as to a thick band passing from the fractured edges of the cervix to the head bone. Ligamentous matter passes also from the cancellated structure head to the neck, thus uniting, by a flexible material, the one broken n of bone to the other.

. With respect to the treatment of fracture within the ule, numerous measures have been adopted for the purpose roducing an ossific union, both by myself and others, but all purpose.

appointed in the attempt, and finding the patient's health suffer from ecessary confinement, what I now direct to be done, is, that a pillow aced under the limb, throughout the whole length, and another be put r the knee, and the limb be, in this way, extended for ten days or a fort-, until the inflammation has subsided. Then let the patient get out of and sit on a high chair, to prevent being too much bent, afterwards with crutches, bearing gently, at first, on the foot, then increase the ure more and more, until the ligament becomes thickened, and the r of the muscles increased. Next, let him use a shoe with a high heel, would very much diminish his lameness.

e patient treated in this way, walks, after a day or two, with a crutch, with a stick, and in a few months requires no additional support. in all cases in which the slightest doubt may be entertained, whether racture be within or without the capsule, it is much better to treat as if they were external to the capsule, and which fracture will unite ne.

. *Secondly:—In fractures external* to the capsule, and n the neck of the bone is driven into the cancellated structure he trochanter major, the leg is from half to three-quarters of ich *shorter* than the other; and they generally happen in the ig, and in persons under fifty years of age.

e foot and toe are *everted*, much pain is felt at the hip, and on the and upper part of the thigh, and the usual rotundity of the joint is crepitus is easily produced by a slight motion of the limb, and it is not necessary, in this accident, to draw the leg down to feel the crepitus, as the retraction is not so great as in the former accident. There is also usually great extravasation into the surrounding parts, and this swelling is quickly followed by a great tenderness to the touch; also violent pain is produced upon slight motion of the joint, followed by a high degree of constitutional irritation; and many months elapse before the patient recovers a proper use of the limb. The accident is, usually, the result of very severe injury.

88. The principle to be attended to in the treatment of this fracture, is, the approximation of the bones by pressure.

You must press the trochanter towards the acetabulum, at the same time preserving the length of the limb, by applying a roller around the foot of the injured leg, and binding it firmly to the sound one, thus making the sound limb afford support, and act as a splint to the fractured one. A broad leather strap should be buckled around the pelvis, and include the trochanter major, so as to press the fractured portions of bone firmly together; and the best position in which you can place the limb, is in a straight direction with the body. I have also known cases do very well where the patient has been laid on his back on his mattress, and the thigh brought over the double inclined plane, which may be very easily made by three boards; one passing from the tuberosity of the ischium to the foot, and the two others, having a joint in the middle, by which you can increase the elevation of the angle as may be required: over these a pillow should be thrown. A long splint should be then placed on the outer side of the thigh, fastened above with a strong strap around the pelvis, and secured below by another strap around the knee, so as to prevent the knee being moved from its position. This must be persevered in for several weeks, and the patient may then be allowed to rise from his bed, if the attempt do not give much pain. He must still, however, wear the strap around the pelvis; and he thus recovers, with a useful but shortened limb.

89. *Thirdly:—Fractures through the trochanter major* are generally oblique, and they may happen without any injury being at the same time done to the neck of the bone.

These fractures occur at any period of life, and are marked by the following symptoms; the limb is very little and sometimes not at all shortened; there is a numbness in the foot; the patient cannot turn in bed without assistance, and the attempt is productive of great pain. The trochanter is sometimes drawn forwards towards the ilium, sometimes it falls towards the erosity of the ischium, but is generally widely separated from that por- n of bone remaining in connexion with the neck. The foot is greatly erted, and the patient cannot sit, as any attempt to do so produces ry great pain. You can feel a crepitus with great difficulty, if the de- ched portion of the trochanter be either much fallen, or much drawn twards.

90. The treatment of this fracture is much the same as that f the former. It unites very firmly, and the patient recovers a od use of the limb.

You should pass a wide bandage round the pelvis, and keep the limb tended, and the patient in the horizontal position, in the way before inted out.

91. Sometimes the femur is fractured *just beneath the ochanter*, and the deformity produced by this accident is very reat, which is caused by the upper end of the bone being drawn pwards by the action of the psoas magnus, and iliacus internus.

The proper way to treat it is by raising the thigh over an inclined plane, d elevating the trunk to about an angle of 45°. In this manner you ing the ends of the bone in apposition, but you should not attempt to press the upper end of the bone, as it only increases the patient's sufferings no purpose.

92. When you meet with *fractures of the condyles of the emur*, extending into the joint, you will find great swelling of he joint, a crepitus, and deformity.

In these accidents, you should place the limb on a pillow in the extended osition, for then the head of the tibia keeps the extremities of the bone in heir places. You should apply evaporating lotions, and leeches if neces- ary, to subdue the inflammation, and then mould a piece of stout paste- oard, moistened, round the knee, and bind it on with a roller. This, hen dry, adapts itself equally to the different surfaces, and forms a most xcellent splint to retain the fractured extremities of the bones. After ive weeks, you should commence passive motion, otherwise anchylosis will ake place.

The same observations apply to *fractures of the head of the tibia*.

93. If a compound fracture extend into the knee joint, and the opening be large, it will be necessary to amputate; but if the opening be small, try to procure adhesion, and thus make it a simple fracture.

FRACTURES OF THE PATELLA.

94. The patella is generally broken transversely, but sometimes longitudinally. It is also subject to compound fracture.

95. *Transverse Fracture:*—In this accident, the upper part is drawn from the lower by the action of the muscles inserted into it, whilst the lower part remains fixed by its ligaments. The degree of separation depends on the laceration of the ligament.

The accident is at once known by the depression between the two portions of bone, into which you may put your fingers, and by the upper part of the bone moving readily on the lower and fore part of the thigh. The power of extending the limb is also lost; and the knee bends forwards from a loss of action in the extensor muscles. Soon after the accident, extravasation takes place on the fore part of the joint, and produces a livid appearance, but this is removed by absorption in a few days. There is afterwards considerable effusion from inflammation into the surrounding parts.

96. The union of this fracture is generally by ligament, whether the separation of the bones be great or little; but still the principle which should guide you in the treatment, is to make that ligament as short as possible.

When called to this accident, you should place the patient on a mattress, extend the limb on a well padded splint, which is placed behind the thigh and leg. The patient should be raised as much as he can to the sitting posture, to relax the rectus; an evaporating lotion of white wash should en be applied, and the heel should also be raised towards the trunk, to ing up the lower portion of the patella. If there should be much in- mmation continue for a day or two, leeches should be applied, and eva- rating lotions continued; and, when the tension has subsided, you may ply your bandages.

The mode generally adopted is, to pass a roller from the foot to the knee, prevent the swelling of the leg; then rollers are applied above and below e joint, under which a piece of broad tape is passed on each side, which rosses the rollers at right angles, and by tying these, the upper portion is rought down towards the lower. But the plan which I like best is this: uckle a leather strap around the thigh, above the fractured portion, and rom this another strap should be passed beneath the foot, the leg being ept extended and the foot raised; this strap is brought up on the other side f the knee, and buckled to the circular strap above the knee; a roller hould also be applied on the leg. After keeping the limb in this position ive weeks, you may begin to use slight passive motion, taking great care, owever, not to do too much, as you would separate the ligamentous union hat had been formed. You may increase this from day to day, until the limb can be bent perfectly.

97. The smallest distance at which I have known the patella o unite, is half an inch, and the greatest distance, seven inches; a moderate distance is one or two inches.

It sometimes happens, that, from the degree of separation, the patient loses the command over the motions of the leg, and in such cases you must xercise the muscles by letting the patient swing his legs over a table, in rder to accommodate the muscles to their new line of action. Unless this e done, or passive motion be used, the patient can never recover the use f the limb.

98. *Longitudinal Fracture:*—In the longitudinal fracture of the patella, the bone also unites by ligament. I have seen it unite by bone, but it was rather a fissure than a fracture.

The treatment will be to apply leeches and evaporating lotions; in a few days a roller should be applied, and then a laced cap, with a strap to buckle above and below the knee, with a pad on each side of the patella, to bring the parts as nearly as possible into contact.

99. *Compound Fractures:*—Compound fractures of the pa-

tella are very dangerous accidents, frequently proving fatal to life, from the violent degree of constitutional irritation which they occasion.

They are generally recovered from by the following treatment; bring the integuments together by a small suture, apply adhesive straps round the knee, evaporating lotions on the fore-part, and keep the limb extended by a splint passed beneath.

Whenever a joint is laid open, except by a valvular opening, that wound is difficult to heal from the flowing of the synovia, but, if the integuments be brought together by a suture, the parts beneath often heal by the adhesive process. The suture should not be kept in more than a week.

FRACTURES OF THE LEG.

100. In fractures of the leg we may have the two bones broken together, or we may have them broken separately.

The first is the more frequent accident, and the usual symptoms by which it is attended, are a change in the direction and shape of the limb, pain, and incapability of walking, or bearing upon the limb, mobility of the fractured pieces, and a distinct crepitus.

101. The same cooling wash, or soap plaster, will be proper in these cases, as in fracture of the femur; and over one of these, the many-tailed bandage.

Two splints are then to be applied, the one on the outside, the other on the inside, of the leg:—in applying them, care should be taken that the outside splint be long enough to reach completely from the knee to the toes. The limb may then be either laid straight out, and still further secured by the application of junks and a foot-board; or it may be laid on its side upon soft pillows, with the knee a little bent.

FRACTURE OF THE FIBULA.

102. A fracture of the fibula generally happens from two to three inches above the ankle joint.

This accident may occur, either in consequence of some violence directly offered to the fibula, that is, some blow upon the bone, fracturing it at the point of contact; or it may happen in consequence of a twist or dislocation of the foot.

103. In fractures of the fibula only, as Mr. Pott observes, the position is not of much consequence; because, the tibia remaining entire, the figure of the leg is preserved, and extension quite unnecessary.

Splints are to be applied, and the limb treated as for a fracture of both bones; with the exception of a roller, which is to be substituted in the place of the usual bandage. It should at first be loosely applied, but afterwards gradually tightened and extended to the foot.

FRACTURE OF THE TIBIA.

104. The tibia may be broken independently of the fibula; but as in these cases, there is no material displacement, the common treatment for fracture of both bones may be safely adopted.

FRACTURES INTO THE ANKLE JOINT.

105. If a compound fracture should extend into the ankle joint, that, of itself, would form no reason why amputation

should be performed; but you should be guided principally by the nature of the injury, by the age, and also by the constitution of the patient.

106. If the compound fracture extending into the joint be oblique, it will generally do well, provided care be taken to procure adhesion of the wound.

This is best effected by applying lint dipped in blood to the lacerated integuments, and allowing it to remain there until it separates spontaneously. The many-tailed bandage should be applied, and kept wet with a spiritous lotion, composed of spirits of wine and water. A splint should be applied on each side, padded with cushions, so as to preserve the great toe in a line with the patella. Place the leg on its outer side, in the semiflex position, so as to relax the muscles, and render the patient's position as easy as possible. The position, however, will require to be varied, according to the situation of the wound.

107. In these accidents, if the bone is comminuted, as well as broken into the joint, and if there is bleeding from any large vessel, it will be proper to amputate immediately; more especially if the person is obliged to work hard for his support, for after recovery from comminution, the bone will bear but a slight degree of exertion.

But still, if the constitution be good, and the person is about the middle age, it is right to take away the small pieces of bone, heal the wound by adhesion, and produce anchylosis.

DISEASES OF BONES.

1. The diseases of bones which we shall now consider are the following; viz. inflammation of bones; periostitis; suppu-

tion in bones; caries; necrosis; exfoliation of bone; exos-
sis; and mollities ossium.

INFLAMMATION OF BONES.

2. The same organization which enables bones to repair the ffect of injury, renders them liable to inflammation, and the va-
ious changes which are consequent on that process.

**Inflammation of a bone may arise from external causes, that is, from ccidental injury, such as a blow; or from internal causes, such as a scro-
ulous disposition of the system, or influence exerted over it by the venereal oison.**

3. Inflammation of the bone may, as in the soft parts of the ody, be either *acute* or *chronic;* it may vary considerably in ifferent cases.

**Enlargement from interstitial deposition and ulceration, or caries, pro-
eeds from what we should call chronic inflammation of the bone, whilst uppuration and necrosis are referable to acute inflammation.**

4. Persons labouring under inflammation of the bones, expe-
rience a deep-seated, aching pain, extremely distressing to the eelings, and finally affecting the health to so remarkable a de-
gree as to induce a speedy emaciation of the body.

The part at length swells, and a tumour forms, possessing great hardness; he skin becomes red and extremely sensible; and there is an increase of heat, with other symptoms of inflammation.

5. *Treatment:*—This must be regulated by the stage and urgency of the symptoms.

During the inflammatory stage of the affection, by antiphlogistic means; by

the abstraction of blood from the part, and other measures of the same character; and when the active period has passed by, counter-irritation, such as setons, issues, and the application of moxæ should be resorted to.

PERIOSTITIS.

6. The periosteum, or the fibrous membrane which covers the bone, is equally liable, if not more liable to inflammation than the bone itself.

As contrasted with inflammation of the osseous structure, inflammation of the periosteum is much more rapid in its development; it takes place much quicker; it is seated upon the bone; and is firm to the touch though possessing a certain degree of elasticity.

7. The symptoms of periostitis are not only locally severe, but the constitution at large participates in the complaint.

The pain is considerable; for being fibrous, and of a very condensed nature, the structure does not easily give way; and when the inflammation is extensive, considerable sympathetic effect is produced on the circulating and digestive systems, and more or less general disturbance ensues.

8. *Treatment:* — Periostitis must be treated much in the same manner as inflammation of the bone.

During the inflammatory period of the affection, you must employ a pretty active local antiphlogistic treatment; you must apply leeches to the part affected; relieve the pain and tenderness by fomentations and poultices: or if these should fail, you must employ mercury to such an extent as to affect the system.

SUPPURATION IN BONES.

9. Abscesses are sometimes found between the periosteum and surface of the bone; at other times within its cancellated

structure; and occasionally, but very rarely, between the lamina forming the shell of the bone.

10. *First:*—When an abscess forms between the periosteum and surface of the bone, it possesses the common characters of the formation of matter.

There is severe pain extending along the surface of the bone; this pain, though severe, is of an obtuse kind; it becomes worse at night, and produces an inequality on the surface of the bone. It is a long time, however, before the periosteum ulcerates; the skin presents a circumscribed blush; you may even feel a fluctuation for a long period before the abscess breaks.

11. When you have ascertained that matter has formed, it should be evacuated as soon as the redness and fluctuation are distinct. The opening should be small, for if it is left to nature, or a large wound made by the surgeon, the bone is deprived of its supply of blood, the part exfoliates, and granulations afterwards shoot out.

As soon as the matter has been discharged, the periosteum should be placed on the bone, as closely as you can, leaving a small opening for the escape of the matter, and apply at the same time, straps of adhesive plaster round the opening, to keep the periosteum in contact with the bone, and the probability is, that the parts will unite by bone.

The treatment to be further pursued is this: if the bone be much exposed and die, touch it with an acid that will decompose the phosphate of lime, and the cartilaginous part also, and for this purpose the lotion of muriatic acid, commencing with two drops to an ounce of water, or the lotion of nitric acid in the same proportion, will be found the most useful: I think, however, that the diluted nitric acid is the best, it induces a healthy state of the bone and of the other parts.

12. *Second:*—When an abscess forms in the cancellated structure, a peculiar process takes place. The result of the pressure of the abscess is to cause an absorption of the cancellated structure, and in this way, the space for the increase of the

abscess continues to be enlarged. It is sometimes called *Medullary Abscess.*

At the time that there is an inflammatory action existing in the medullary membrane, there is a corresponding degree of inflammation going on in the periosteum, which causes a bony crust to be deposited on the surface, which materially increases the size and strength of the bone. But upon that part of the bone least covered by skin and muscles, there is an ulcerative process going on, which overcomes the deposit from the periosteum, and thus the matter is evacuated. In this way, it often happens that there is little of the original bone left, but the weight of the body is principally supported by the new shell of bone which is formed.

13. In these cases, if the constitution is so enfeebled that it cannot deposit a sufficient quantity of bony matter externally, whilst the process of absorption is going on within; then the coats of the bone become so thin, that the bone either breaks, or cannot support the superincumbent pressure.

The best treatment to be pursued in this stage of the disease, is to inject the interior of the bone with the muriatic or nitric acid lotions, the latter is preferable, and at the same time, insist on the observance of rest. Support the constitution, and avoid all those causes which would produce irritation, either generally or locally.

14. *Third:*—Abscesses in the shell of the bone require to be treated in the same way, and their process of restoration occurs rather quicker than when the abscess is seated more internally.

CARIES.

15. Caries is a disease of the bones supposed to be very analagous to ulceration of the soft parts.

The bones, like other parts of the body, are composed of arteries, veins, absorbent vessels, nerves, and a cellular texture; they are endued with

itality; they are nourished, they grow, waste, are repaired, and undergo arious mutations according to the age of the individual; and they are subect to diseases analogous to the soft parts.

16. Bones of a spongy texture are more frequently attacked y caries, than such as are compact.

Hence, the vertebræ; astragalus, and other bones of the tarsus; those of he carpus; the sternum; the pelvis; and the heads of long bones are often ffected; and the bones of young persons are unquestionably more frequently he seat of caries than those of old subjects.

17. In the most common species of caries, a loose fungous lesh grows out of the interstices, formed on the surface of the liseased bone, and bleeds from the slightest causes; while, in he soft parts, a sinus generally leads down to the caries, and mits a very fetid, dark-coloured sanies.

Different writers have endeavoured to demonstrate different species of aries; but there are at present, so many circumstances, throwing obscurity n preciseness, that they can only be divided into three kinds; viz. caries rom external causes; caries from an internal local cause without disease; nd caries from a general internal cause, or constitutional disease.

18. *Treatment*:—The indications in the treatment of caries re; either to produce a change in the action of the diseased ortion of bone, whereby it may regain a healthy state; or to lestroy it altogether.

The first indication is to be attempted by diet and internal remedies; nd the second, by the actual and potential cauteries, and cutting instrunents.

NECROSIS.

19. This disease of the bones is very similar to caries, yet ufficiently distinguishable by its characters.

In *caries*, the nutrition of the bone is only impaired, and an irregular action disunites the elements of the bony structure, which consequently sustains a loss of substance; but every remaining part is yet alive. In *necrosis*, on the contrary, the vitality and nutritive functions cease altogether in a certain portion of the bone, the separation of which then becomes indispensable.

20. The causes of necrosis are not essentially different from those which produce ulcers and gangrene of the soft parts.

These may be wounds, contusions, pressure, fractures, comminutions, acrid substances, caustics, extreme degree of heat or cold; or they may exist in constitutional disease.

21. The symptoms which attend necrosis are those of a high inflammatory character.

There is a considerable general tumefaction of the limb; a firm tumefaction with increased heat, throbbing, and violent pain; and when you put the hand to the part and grasp it, you are sensible of a considerable increase in the size of the bone. With these local symptoms, you have very considerable disturbance of the circulation; decrease of appetite; white tongue; thirst; want of sleep; and very commonly delirium.

22. *Treatment:*—We have just seen that both the local and general systems are highly inflammatory, your treatment must, consequently, be strictly antiphlogistic.

Free abstraction of blood, by leeches, fomentations, and such kind of treatment, may alleviate, in some degree, the sufferings of the patient, but it does not put a stop to the progress of the complaint. The greatest benefit we can produce, by surgical treatment, is by making free openings in the early period of the affection, so as to give issue to matter as soon as formed in the neighbourhood of the bones. When a free vent has been given to the matter, we sometimes can bring the disease into a quiet state by keeping the limb at rest, and by employing counter-irritation.

EXFOLIATION OF BONE.

23. By exfoliation of bone is meant the spontaneous separation of one part from the other; and this may be external or internal.

The process of separation is the same as among soft parts;—ulceration takes place, granulations form between the dead and living bone, and the useless portion thus becomes detached and forced away.

24. *External:*—When the periosteum is separated to any extent from the surface of the bone, if it be immediately replaced, it will again unite, and no exfoliation will take place; but if it be allowed to remain detached from the surface of the bone for twenty-four hours, it will not re-unite, the bone dies, and is ultimately separated.

The dead portion of the bone appears at first white, but it soon becomes black from the hepatized ammonia formed during the putrefactive process.

25. The separation of the dead from the living portion of the bone, is a tedious process, and is effected by the action of the absorbents on the surfaces of the living bone, removing that part which is in absolute contact with the dead bone; a space is thus formed into which granulations can rise.

When these granulations reach the dead bone, they also act on it, and therefore you find the surface rough and uneven, which is in contact with them, whereas the external surface remains perfectly smooth.

26. The object of your treatment in this case, should be to quicken the process of the granulations a little, and to act chemically on the parts by the use of acids.

It is right, if we wish to diminish the size of the exfoliation, to bind it

upon the granulations, which will absorb a part of it, according to experiments made by Sir William Blizard on this subject.

27. *Internal:*—Internal exfoliation is also a very singular process, which I have already described to you, when speaking of medullary abscess.

In the treatment of this disease, as soon as the bones become loosened, which you may easily know by passing a probe into the wound, what I should advise you to do is this, take away a portion of the new bone, so as to admit of your sawing the old bone into two portions, and then draw them out.

EXOSTOSIS.

28. An exostosis is a tumour formed by an exuberant growth of bony matter on the surface of a bone.

29. Exostoses have two different seats; from whence they may be named *periosteal* and *medullary.*

By *periosteal exostosis*, I mean an osseous deposition seated between the external surface of the bone, and the internal surface of the periosteum, and firmly adherent to both; and *medullary, exostosis*, I call a similar formation, originating in the medullary membrane, and cancellated structure of a bone.

30. Exostosis, I would also divide into two other general divisions, according to their structure, as being either *cartilaginous* or *fungous.*

31. *Cartilaginous:*—The cartilaginous exostosis contains only a very small quantity of the phosphate of lime, and grows originally from the inner surface of the periosteum, and spiculæ of bone afterwards shoot into it.

Where the exostoses are cartilaginous, growing from the periosteum, they ase to increase beyond a certain extent, and usually form at the insertion the triceps adductor magnus. You should make an incision through the teguments, cut through the muscle in the direction of its fibres, and having ached the top of the exostosis, you find the knife easily sinks into it, from s being still partly cartilaginous. Then slit down the muscle on each side, ad apply the circular saw invented by Mr. Machim, which is worked by a inch in the handle.

32. When the exostosis arises from the cancellated structure f the flat bones, and the diseased surface is not large, you may et rid of it by a different plan.

Make an incision through the periosteum covering the tumour, and then parate it further with the knife on each side, and the exostosis will be radually discharged by the suppurative process.

33. *Fungous:*—The fungous exostosis is rather a nest of one enveloping the fungus, than constituting the fungus itself. t grows from the medullary membrane.

In the treatment of the fungous exostosis, nothing can be done but to alliate; the growth will proceed in spite of local and constitutional reedies.

MOLLITIES OSSIUM.

34. The disease thus named is intended to signify, a morbid oftness of the bones, which become preternaturally flexible and capable of forming a natural support to the soft parts.

This state of the bones is the consequence either of the inordinate absorpon of the phosphate of lime, from which their natural solidity is derived, r else the matter not being duly secreted into their texture.

35. The mollities ossium is an exceedingly uncommon disease, nd its causes are buried in obscurity.

It is supposed, however, to depend upon some peculiar state of the constitution, and the individuals attacked with it, have been remarked, to be most about, or rather beyond, the middle period of life; and generally, if not always, women.

36. This disease when once established generally goes on to the destruction of the patient.

Your indications of treatment should be to alter and invigorate the system at large, and to palliate such symptoms as are under your controul.

ON BURNS AND SCALDS.

1. Burns and scalds produce three different effects, vesication, desquamation, and gangrene.

2. *First:*—If called in when *vesications* only are produced, there is no danger, although the vesicles be numerous and extensive. The object is to preserve them from bursting, and therefore do not open them on any account, but allow the serum to accumulate in them, until a new cuticle is produced; the serum escapes, and there is no further mischief.

If you open them, there is a constitutional effort produced, which is followed by some considerable inflammation, and sometimes by suppuration, and the sufferings of the patient are very great. All you have to do is to apply evaporating lotions, as the camphorated spirits of wine, or spirits of wine and the diluted solution of the acetate of lead, to prevent the disposition there is in the cuticle to break. A little opium should also be given to allay the irritability.

3. *Second:*—When the burn is severe enough to produce *desquamation,* the most violent symptoms arise; indeed, it is the worst stage of the injury, from leaving the cutis unprotected.

The spirits of turpentine is the best application in this form of burn, as the object is to excite a speedy re-action; and if you apply evaporating lotions, re-action can never take place. Lime water and the oil, and lime water and milk, have been commonly used; but the spirits of turpentine is the best application. Where the constitution is irritable, and it gives violent pain, dilute it with oil, or with oil and lime water, and I think it would then form a very good application.

Give opium and wine as long as the chilly state continues; but as soon as the heat is developed, and the pulse has recovered its power, do not continue it any longer, but employ other means to reduce inflammation when necessary.

4. *Third*:—The third effect sometimes produced, is *gangrene*, or the death of the parts. There is no immediate danger when this takes place, for the constitution does not suffer in the first instance; but it is to be feared when the sphacelated part begins to separate. The absorbents act briskly, and a great discharge follows the separation of the part.

Fomentations and poultices are most useful in those cases, as the turpentine cannot act on the dead surfaces. It is necessary to give wine and opium during the chilly state, as in the former case. The treatment is just the same indeed as in a case of common gangrene, and towards the end, when the process of suppuration is commencing, you may give wine and opium, or ammonia, to support the constitution.

5. After severe burns or scalds, you will often have the most remarkable deformities, and they are usually owing to the natural tendency which there is in the cicatrices to contract. The wounds will often heal smoothly, but afterwards become puckered.

These contractions are apt especially to occur in the neck, by which the skin is united to the chest; and if the arm be the burnt part, the fore-arm becomes united to the upper-arm.

The fingers become united to each other, and the thumb is sometimes bent very much backwards.

6. Such, indeed, is the deformity in many cases, that you

ought to give your attention to prevent them as much as you can.

The contraction in the arm may be prevented by passing a splint behind the arm, and keeping the arm extended on it. The same rule should be attended to if there is any danger of the thigh uniting to the abdomen. You should pass a splint behind the thigh, and keep the thigh extended on it, and the contraction will be prevented. With respect to the neck, do what you will, you cannot prevent contractions.

7. In burns or scalds, when the cuticle is removed, and the cutis is in a granulating state, you may produce cuticle over it very easily, by proper treatment.

This object is sometimes well accomplished by sprinkling the granulations with the oxyde of zinc. But a lotion of two grains of the sulphate of zinc, to an ounce of the liquor plumbi subacetatis dilutus, appears the best application to me. Some lint should be dipped in the lotion, and laid on the wound; over this, some folded linen should be placed, and over the whole, a piece of oiled-silk, to prevent evaporation.

END OF PART I.

MANUAL OF SURGERY.

PART II.

CONTAINING PRACTICAL NOTES CHIEFLY SELECTED FROM A
SERIES OF LECTURES ON DISEASES OF THE EYE,

DELIVERED BY

JOSEPH HENRY GREEN, ESQ. F. R. S.

PROFESSOR OF ANATOMY TO THE ROYAL ACADEMY,
SURGEON TO, AND LECTURER ON SURGERY,
ST. THOMAS'S HOSPITAL.

MANUAL OF SURGERY.

DISEASES OF THE EYE AND ITS APPENDAGES.

SECTION I.

In consequence of the various affections of the eye, I shall first speak of simple inflammation of the tunica conjunctiva; then of its modifications, its consequences, and treatment.

SECTION II.

I shall next speak of simple inflammation of the deeper seated tunics, those of the globe of the eye; the consequences of such inflammation, and the treatment which it may be proper to adopt.

SECTION III.

Thirdly, I shall describe the diseases of the humours, and particularly that disease of the crystalline lens which terminates in cataract; and the operations which are necessary for that disease, &c.

SECTION IV.

Lastly, I shall speak of the diseases of the appendages of the eye, their treatment, and the operations required for their cure.

SECTION I.

OF SIMPLE INFLAMMATION OF THE CONJUNCTIVA, ITS MODIFICATIONS, CONSEQUENCES, AND TREATMENT.

SIMPLE INFLAMMATION OF THE CONJUNCTIVA.

1. Simple inflammation of the conjunctiva may be divided, like other inflammations, into *acute* and *chronic*.

2. *Acute Ophthalmia:*—The symptoms of the affection in question, do not differ from those of acute inflammation of other parts of the body, except in so far as they are modified by the structure of the part, and by the function of the organ. We will first speak of the local appearances, and afterwards of the constitutional derangements.

The first symptom is redness of the part; which is very remarkable, because the blood naturally conveyed by the vessels to this part is colourless. The vessels become injected with red blood. When the irritation continues, the vessels become still more apparent, and at length, all the interlacements and anastomeses of the vessels of the conjunctiva, partake of the inflammation, and present almost one uniform appearance of redness. During this time, more or less pain is experienced: at first, as the vessels become filled, an uneasy sensation is felt; this increases, and at length, upon the admission of light, a sharp lancinating pain is experienced; the patient is under the necessity of keeping the eye closed, and, indeed, has some difficulty in raising it, not only from the pain he suffers, but from the degree of fulness and swelling with which it is accompanied. This pain goes on increasing, and at length, the patient complains of a burning heat, and a sensation as if some extraneous body were lodged in the conjunctiva of the lid. At this time, the admission of the least light or air produces such lancinating pain, that the eye is spasmodically closed.

The affection is also attended with a more abundant secretion of tears, which at the highest stage of excitement, is suddenly diminished, and there is a preternatural dryness of the eyes, producing painful sensations. A considerable degree of swelling takes place, the conjunctiva becomes turgid from the quantity of blood admitted by the vessels, and effusion follows. Although the swelling is pretty equally diffused over the whole surface of the conjunctiva, it seems to be the greatest at the transparent cornea, because here the coat is more tightly adherent. The conjunctiva is here elevated in a circular fold, and this appearance is called *chemosis*. The eyelids are in general more or less swollen. Not only is pain experienced in the eye, from the causes I have mentioned, but also a sense of weight and fulness in the globe of the eye, as if the ball were too large for the socket. The neighbouring parts also, the forehead and temples, partake of the pain; there will be a shooting pain to the maxillary bone, or more deeply seated in the head; and these pains are in some instances extremely violent.

3. The local symptoms, as we have already hinted, are attended with considerable constitutional effects.

There will be a greater or less degree of constitutional irritation; great lassitude; prostration of strength; chilness or rigor followed by heats. The skin will often be hot and dry, pulse quick and hard, stomach affected, and vomiting produced. The patient will also complain of pain in the back, and in short, of all the symptoms which indicate a considerable fever of the sympathetic kind, arising from local irritation.

4. The degree in which the symptoms of this disease occur, will very much depend on the constitution of the patient.

In young and robust persons, there will often be a high degree of local inflammation, without much constitutional irritation; while on the other hand, in delicate and irritable patients, a much less, nay sometimes a very trifling degree of local inflammation, will be accompanied with violent symptoms of constitutional derangement.

5. The principal causes of this complaint are, the admission of any extraneous body, and variations of temperature, especially if accompanied by intense heat and light, or partial exposure to drafts of cold air.

It will not be necessary to point out the predisposing causes of this complaint, because they do not differ from the predisposing causes of inflammation in any other part of the body.

6. *Chronic Ophthalmia:*—The term *chronic*, to inflammation of the conjunctiva, is not applied merely with reference to duration of time; it is not only applied to signify that state of congestion and debility of vascular action produced by the acute stage; but it is also applied to that state of inflammation, which, from the commencement, has a character of atony and debility.

As this is the most frequent form in which you will find this inflammation, whether primary or following the acute stage, it is necessary to attend particularly to the symptoms by which it is distinguished, as the mode of treatment is very different from that which is required in acute inflammation.

7. The symptoms of chronic differ from those of acute inflammation of the conjunctiva, rather in degree than in kind; so that after they have existed for some time in the acute stage, you find the disease gradually passing into the chronic stage.

The redness will be less intense, the pain which accompanies it less acute, the intolerance of light will be less, the chemosis and swelling will be diminished, the effusion of tears less considerable, the constitutional irritation will, in a great degree, have subsided, and, in short, all the acute symptoms will be mitigated. There will still, however, remain a considerable degree of irritability in the eye, on exposure to light; some artificial defence to exclude the light will be necessary, and the person will still be incapable of applying the organ to the ordinary purposes of vision.

8. The causes of chronic inflammation, both exciting and predisposing, are very similar to those of acute inflammation; but there are many causes which tend to produce this inflammation, accompanied with atony and debility in the very onset, which distinguish it from acute inflammation.

Chronic inflammation of the conjunctiva is very apt to take place, where the patient has, for a long time, been labouring under disorder of the digestive organs. It is not unfrequently the concomitant of dentition, measles, or small-pox; it sometimes accompanies rheumatism and gout. Frequent intoxication and various other causes may predispose to it. It is also very apt to arise from, or to be kept up by exposure to acrid fumes or smoke in particular trades.

9. In general, inflammation of the conjunctiva is a very manageable complaint. It passes into chronic inflammation after the acute stage has continued for a certain time, and it not unfrequently subsides of itself.

A spontaneous cure must not, however, be depended upon, and we ought on no account to neglect or relax in the proper mode of treatment, from any reliance upon such a cure; because by simple inflammation of the deeper seated tunics of the globe of the eye, suppuration may be induced, the organ may at length become permanently disorganized, and the sight of the eye irretrievably lost.

10. The consequences of inflammation of this membrane are very similar to those of inflammation in other parts of the body; namely, effusion, adhesion, suppuration, ulceration, and mortification.

It sometimes terminates in *effusion*, the serum or blood under the conjunctiva rising in a roll above the cornea.

It sometimes produces the *adhesive* process; and when it terminates in this manner, the adhesive matter is deposited under the conjunctiva, which covers the transparent cornea, and is recognized by a hazy appearance at the part. The adhesion is various; both in extent and quantity; it is sometimes so slight as only to produce a simple clouded appearance over a certain part of the cornea, which is technically called *nebula;* it is at other times more considerable in quantity, and produces an appearance of considerable opacity in the cornea, which is usually called *albugo* or *leucoma*.

The inflammation sometimes proceeds to the *suppurative* process; indeed, the tunica conjunctiva appears to be of a nature very analagous to the mucous membranes of the body, and like these, is exceedingly prone to the suppurative stage of inflammation. The suppuration generally proceeds from the surface of the conjunctiva, as from the surface of any mucous membrane in a state of inflammation. In other instances, the formation of pus is circumscribed; a deposit of lymph takes place where the conjunctiva covers the cornea, or in its immediate vicinity, and a little abscess or pustule arises from the centre.

Ulceration is sometimes produced, and this usually occurs in the cornea, in consequence of laying open the pustule just alluded to, probably from the denudation or exposure of the cornea.

Lastly, *sloughing* and *mortification* of the cornea are not uncommon effects of a high degree of suppurative inflammation.

11. *Treatment:*—In the treatment of simple inflammation of the conjunctiva, it will be necessary to adopt at once, with vigour, antiphlogistic remedies, as the best mode of diminishing the action of the heart and arteries; and with this view the use of the lancet should be freely resorted to in the commencement.

You ought not to be satisfied with taking away a certain quantity of blood; as, for instance, eight, ten, or sixteen ounces; but you should in this, as in all other cases of acute inflammation, accompanied with hardness of the pulse, make a free orifice in a large vein, and take away a quantity of blood, until some manifest effect is produced upon the action of the heart and arteries; keep your finger on the pulse of the patient, in order to ascertain how the heart is affected, and carry on the bleeding even to faintness. This may prevent the necessity of again having recourse to the lancet; or if it should be necessary, to do so, blood may be taken away in much smaller quantities. You will, of course, be guided by the state of the patient's pulse, as the only criterion.

12. When you have diminished the pulse by general bleeding, leeches may be afterwards conveniently applied, and other resources made beneficial.

The application of leeches, in the first instance, except in very large numbers, is seldom sufficient in acute inflammation; three or four will scarcely produce any effect upon it.

Opening the temporal artery has been recommended, and it is attended with very good effect. Some practitioners advise the practice of dividing the vessels of the part by scarifying the conjunctiva, but it is a plan I do not recommend.

13. Great benefit is derived from treatment directed more especially to the body at large; such as diaphoretic medicines;

and the constitutional irritation may be materially abated by keeping up the secretions from the intestines, by altering them and rendering them more healthy.

The tartarized antimony should be used with the first view. The bowels should be freely acted upon, by doses of calomel, combined with jalap, scammony, or cathartic extract; and the effects of these medicines should be kept up by the exhibition of neutral salts, so as to produce a considerable number of watery stools. At the same time the diet of the patient should be low, and he should be kept in a state of perfect rest and quietude.

14. When an impression has been produced on the symptoms, by the treatment I have laid down, it will then be proper to adopt other measures.

For instance, where blood has been taken to a considerable extent, the application of a blister to the nape of the neck will be attended with beneficial effects. The treatment of the part should also be considered, the head should be raised, and the access of air or light should also be prevented, by keeping the room darkened. With respect to local applications, both warm and cold remedies may be used with benefit, but the choice should depend entirely on the feelings of the patient; if he does not find relief from warm, you should then try the effects of cold applications.

15. Such is the plan of treatment you would adopt in acute inflammation of the conjunctiva; but when the *chronic stage* has commenced, you must pursue a different course.

The evacuating plan may to a considerable extent be laid aside; the diet, though not stimulating, may be more generous; there will be no necessity for continuing the diaphoretic medicines, as the skin will generally be sufficiently moist; nor will it be necessary to evacuate the bowels so freely, though every attention should be paid to their due action; alterative medicines will often be found beneficial.

16. The local applications which are used for the chronic inflammation, should be entirely different from those used in the acute. They ought to be moderately astringent and stimulating,

as your object now is to excite some degree of action in the vessels, and to get rid of their relaxation and atony, care being taken not to stimulate the parts too much.

Various collyria or eye-waters are used for this purpose, all of them moderately astringent or stimulating; such as the solution of alum in water, solutions of the sulphate of zinc or the sulphate of copper, or the liquor plumbi subacetatis. These solutions at first should be very much diluted, and afterwards gradually strengthened in proportion to their action on the part, and the degree of stimulus which may be produced.

To judge how far the stimulus may be carried, the criterion is exceedingly simple; if you find that a certain degree of smarting and pain is produced, which soon subsides, and leaves the patient much more easy than before, you may be convinced that the collyrium is beneficial; if on the other hand, the patient experiences a great degree of pain, which does not subside speedily, and the vessels become turgid, you may be assured that the collyrium is doing harm, and that the quantity of stimulus ought to be diminished.

17. Among the numerous applications recommended in this complaint, we will speak of those most frequently employed, and the manner of using them.

Those commonly employed are, the solution of alum in water, solutions of the sulphate of zinc, or the sulphate of copper; or the liquor plumbi subacetatis; and the best mode of applying these eye-washes is to inject them by means of a silver or ivory syringe, introduced under the lids every three or four hours. In this way you may be certain that the solution is diffused over the whole surface of the conjunctiva. An eye-cup will answer the purpose very well, if the person, after immersing his eye in the cup, has the courage to open it. They will succeed better with the chill off than otherwise. The vinum opii seems to be one of the best stimuli which can be employed in chronic ophthalmia; it acts as a mild astringent, and at the same time, by its soothing quality, sheaths the effect of the stimulus, so that no pain is produced; it may be employed in the quantity of one drop, or even of two or three drops, two, three, or four times a day. It will be best to drop it into the inner canthus of the eye, with a camel-hair pencil; the patient should then shut his eye, and move it about, so that the fluid may be diffused over the whole surface. The patient should wear no bandages, have no other protection than a shade; and if he can bear a moderate degree of light, it should be freely admitted.*

In addition to the local treatment we have gone through, you must give those medicines which will act on the morbid state of the constitution.

PURULENT OPHTHALMIA.

18. Suppurative inflammation of the conjunctiva is the most severe form of inflammation in that membrane.

It is exceedingly acute, very rapid in its progress, and often very destructive in its ultimate effects; consequently requires very active treatment.

19. The symptoms of purulent ophthalmia are so manifest, that there can be no doubt of the nature of the complaint, its prominent character being the formation of a considerable quantity of purulent matter. In other respects the symptoms are not very different from those which characterize inflammation generally.

The patient at first feels an uneasy sensation about the eyes; next some degree of pain on the admission of light; redness, and swelling of the part; eyelids swollen; conjunctiva, where it covers the fore part of the globe of the eye, is tumid; considerable chemosis, and often such turgescence of the upper lid as to prevent the patient from raising it. The lids are often so much tumified as to become everted, so that a sort of roll of the lid is formed. These are the symptoms which precede the discharge of matter. A fluid first appears which is not opaque, and has the character of tenacious mucus; in the course of twenty-four hours it assumes the appearance of pus. It is thick, yellow, sometimes green, and poured out in considerable quantity. The tunica conjunctiva has the appearance of a villous membrane highly injected.

20. The acute stage of purulent ophthalmia is of very short duration; it has a tendency to pass rapidly into the atonic stage, in which there is action without power, and congestion of the vessels of the part.

At this time the violence of the acute symptoms is mitigated, but the patient labours under considerable prostration of strength.

21. Purulent ophthalmia has a great tendency also to terminate in sloughing.

Sometimes the sloughing commences in a small portion, and gradu lamella after lamella is destroyed, until the aperture assumes a funnel- shape: at other times a slough forms in a considerable portion of corne once, and opens into the anterior chamber.

22. *Causes:*—The causes of purulent ophthalmia are vario It is often occasioned by the violent degree of inflammation p duced by some highly irritating substance; and it occasiona occurs in new born infants.

In the last case, it is doubtful whether it arises from the first exposur the eye to the light, or, as is commonly supposed, from the vaginal se tions to the eyes of the child on its passage into the world. It gener takes place in the first week or month after the birth of the child, and seld later than three months.

23. *Treatment:*—The treatment of purulent ophthalmia m obviously very much depend on the stage of the complaint.

During the first stage, when all the indications of acute inflammatio present, you must bleed largely from the arm of the patient; topical ble ing is out of the question except with children. All the other antiphlogi remedies, which I before enumerated to you, are to be put in practic this case. Purgatives should be administered so as to produce a consi able quantity of watery stools; diaphoretic medicines, and especially tartarized antimony, in doses of a quarter to half a grain, should be gi at such intervals, as to keep the patient in a state of nausea; and top applications should be employed very much in the same manner as in sin inflammation. During the first stage of the complaint, moist warmth in form of fomentations and poultices, will be found beneficial: the acute st however, is of very short duration, and they are not to be continued bey that period.

24. The extent to which the antiphlogistic plan should carried, must vary according to the violence of the complai and the constitution of the patient.

You must not, in any constitution, be deterred from adopting an ac plan of treatment, until you have produced a manifest effect on the sys of the patient; until the pulse becomes soft, the skin moist, the swelling, tension, and throbbing of the eyes considerably abated; the chemosis diminished; and, in fact, all the acute symptoms, more or less, subdued. When this is the case, the subsequent treatment will, in general, be very easy.

25. If it should happen that you are not called upon for this complaint until it has arrived at a chronic stage, when the conjunctiva is feebly pouring out pus; the pulse depressed; the skin cold and clammy; the countenance sallow; and when the constitution has materially suffered from the progress of disease, an entirely different plan of treatment will be required.

Gently stimulating applications should be employed by means of a syringe, so as to cleanse the conjunctiva, and free it from the pus which has collected on its surface, and, at the same time, stimulate the relaxed vessels.

In general, it will be necessary to employ tonic remedies, such as bark, for instance; always attending to the due action of the bowels, without which, tonics would be useless, and even injurious.

26. With respect to the treatment of the sloughing cornea, some nicety will be required. When you have ascertained that the sloughing process is commencing, from the hazy or opaque appearance of the cornea, the antiphlogistic must be changed for a gently stimulating and tonic plan of treatment.

Weak astringent collyria should be used to favour the throwing off of the sloughs. Observe the process of the sloughing from time to time; if there is a firm layer beneath, the patient is going on well, but if the sloughing has a flocculent, soft, ash-coloured appearance, in addition to mild stimulants to the part, you should employ tonic remedies, such as bark.

27. The errors in the treatment of purulent ophthalmia may be comprised in two words; they consist either in continuing the depleting plan too long, or not resorting to it sufficiently early.

If the antiphlogistic plan be not adopted at a very early stage of the disease, the tonic treatment will afterwards be of no service; and, on the other hand, if you continue the depleting plan too long, you will check the restorative process, and the beneficial effects which nature would otherwise assist in producing.

PURULENT OPHTHALMIA IN INFANTS.

28. According to the late Mr. Ware, the principal difference between the purulent ophthalmia in infants and that in adults, consists in the different states of the conjunctiva.

In the former, notwithstanding the quantity of matter, confined within the eye-lids, is often profuse, the inflammation of the conjunctiva is rarely considerable, and whenever the cornea becomes impaired, it is rather owing to the lodgment of such matter on it, than to inflammation. But in purulent ophthalmia of adults, the discharge is always accompanied with a violent inflammation, and generally with a tumefaction of the conjunctiva, by which its membranous appearance is destroyed, and the cornea is made to seem sunk in the eye-ball.

29. In children, purulent ophthalmia is occasionally accompanied with eruptions on the head, and with marks of a scrofulous constitution.

30. *Treatment:*—The treatment of these cases, must obviously depend on the stage of the complaint, and on the nature of the symptoms which present themselves.

31. If the disease be in its first stage, a simple antiphlogistic plan is likely to succeed.

The temporal arteries are to be opened, or leeches applied to the temples, or neighbourhood of the eye-lids, and a blister put on the nape of the neck. The child should be kept in a cool room, not covered with much clothes, and if no diarrhœa prevail, a little rhubarb or magnesia in syrup of violets should be prescribed.

32. When the first short inflammatory stage is over, an immense discharge of matter commences to flow from the eyes.

Here, emollient applications must generally not be used. On the contrary, astringents and corroborants are immediately indicated, in order to restore to the vessels of the conjunctiva and eye-lids their original tone, to rectify the villous and fungous appearance of the lining of the palpebræ, and thus finally to check the morbid secretion of matter.

33. Mr. Ware condemns the use of emollient poultices, as having a tendency to increase the swelling and relaxation of the conjunctiva.

If poultices are preferred, he particularly recommends such as possess a tonic or mild astringent property; as one made of the curds of milk, turned with alum, and an equal part of unguentum sambuci, or prepared lard. This is to be put on cold, and frequently renewed without omitting an astringent lotion.

34. When the secreted matter is glutinous, and makes the eyelids so adherent together, that they cannot be opened, after being shut for a length of time, you must use remedies to overcome the difficulty.

The adhesive matter must be softened with a little fresh butter mixed with warm milk, or by means of any other soft oleaginous liquor, after the poultice is taken off, and before using the lotion.

35. If eversion of the eyelids only occurs when the child cries, and then goes off, nothing need be done in addition to the above means.

When, however, the eversion is constant, the lotion must be repeated more frequently than in other cases; the eye-lids put in their natural position after its use; and an attendant directed to hold on them, with his finger, for some length of time, a compress dipped in camphor water.

GONORRHŒAL OPHTHALMIA.

36. Another, and one of the most violent forms of purulent ophthalmia, is that which is called *gonorrhœal,* from its being produced by the application of gonorrhœal matter to the conjunctiva.

This of all others produces the most intense degree of inflammation; and although it is said upon good authority to be depending on a metastasis of the gonorrhœal symptoms from the urethra to the conjunctiva, I have never seen a case in which I could entertain the least suspicion that the complaint was produced in that way, and I do not think that there is sufficient evidence to establish such an opinion.

37. Gonorrhœal ophthalmia Mr. Welbank supposes to differ in no material point from purulent ophthalmia, excepting that its symptoms, in general, are more violent, and its progress more rapid.

Thus, he says, the swelling of the conjunctiva, particularly that covering the globe, the pain of the eye, the intolerance of light, the purulent discharge over the cheeks, are all much more vehement than in the purulent eye, produced from other causes.

38. *Treatment:*—The first indication, is to oppose the inflammation, and thus resist the destruction of the eye and opacity of the cornea.

A copious quantity of blood should be taken away both topically and locally; mild laxatives should be exhibited, and a blister applied to the nape of the neck or temples. The eyes ought to be often fomented with a decoction of white poppies, and warm milk repeatedly injected beneath the eyelids. To prevent the palpebræ from becoming agglutinated together during sleep, the spermaceti cerate should be smeared on the margins of the tarsi, every night.

39. When the heat and pain in the eyes, and febrile symptoms

have subsided; when an abundant discharge of pus has commenced; all topical emollients are to be relinquished.

In these states you should employ a collyrium, containing one grain of the oxymuriate of mercury in ten ounces of rose water.

STRUMOUS OPHTHALMIA.

40. Strumous or scrofulous ophthalmia is so called because it is met with in those persons who are of a scrofulous diathesis. It occurs in children and not unfrequently in adults.

In this affection, the inflammation is of the chronic kind from the commencement; *the patient cannot bear the least access of light;* there is great difficulty of opening the lids, the orbicularis palpebrarum is spasmodically contracted, and so difficult is it for the patient to open the eyes, that he can seldom do it.

The only way by which this can be done, is fixing the head of the patient, when it is a child, between your knees; with the fore finger of the one hand to raise the upper lid, and with that of the other to depress the lower, which will give you an opportunity of seeing the eye; but in doing this, great caution will be required to prevent eversion of the under lid, or any undue violence to the part.

41. In this complaint, it is of the greatest importance that the cornea should be narrowly watched, for, if the inflammation continues for a long time, ulcers are very apt to form on it.

Disorganization of the different parts of the eye often takes place; the cornea, or rather conjunctiva covering it, becomes covered with an opaque capsule, with vessels shooting over the cornea, so as to give it an herpetic appearance; that is, there will be seen over the cornea, yellow spots, which are deposits of lymph. These open into small ulcers, which are streaked with vessels carrying red blood. The eye becomes very painful, and extremely irritable, and there is often, in this state, intense redness of the conjunctiva.

Under these circumstances, similar ulcers form in different parts of the cornea. The formation of these ulcers produces all the symptoms of acute inflammation of the eye, and the organ not unfrequently becomes slowly and gradually disorganized. So long, however, as the cornea continues bright, and of its natural colour, there will be no danger to apprehend from the formation of ulcers.

42. *Treatment:*—Although strumous ophthalmia is of the chronic nature, there is still considerable irritation; and as the constitution in which it occurs is of an unhealthy character, your treatment must be both general and local. First, constitutional.

The mild depleting plan must be first adopted, regulated as far as the constitution will bear it; you must remove the symptoms of irritation; open the bowels freely by calomel purges, repeated more or less frequently, as they improve the secretions. Alterative mercurial medicines should then be given, and, if necessary, they should be combined with rhubarb and magnesia, but not so as to produce watery stools.

When the fever becomes diminished, the bowels perform their natural functions, the tongue looks clean, and the skin assumes its healthy feel, you may begin with tonic remedies, and alter the diet, &c. Aromatic bitters, combined with alkalies; light and nutritious diet; warm clothing; moderate exercise; sea-bathing, &c.

43. As for the treatment of the part affected, it will be right to employ depletion at the onset, and mild astringent applications afterwards.

Leeches should be employed; it will be also proper to apply blisters behind the ears, or to the nape of the neck; and blisters in this complaint are no ordinary remedy; warm and moist applications are beneficial; the steam of water containing opium will also prove useful. If any of these applications be used at the onset, they must not be long continued; mild astringent collyria must be had recourse to, and their strength must be regulated by the feelings of the patient. The vinum opii is particularly adapted to the purpose in question. Alteratives are also sometimes necessary.

PSOROPHTHALMY.

44. Psorophthalmy is an inflammation particularly of that

part of the conjunctiva which lines the lids, but it extends sometimes over the whole of the conjunctiva, covering the globe.

This complaint is very nearly allied to strumous opthalmia, because it is in general a consequence of it; it is characterized by the same intolerance of light; the inflammation is of the chronic kind, and the patient complains of a sensation as if there was some extraneous body in the eye, grit or sand, which gives rise to an effusion of tears.

At the origin of the disease, there is a glutinous matter secreted on the edge of the lids; ulcers form; and there is often great difficulty in separating the lids from one another. By this means, matter lodges on the lids, and tends to keep up the irritation of the part; the redness sometimes extends down the cheek, and excoriation of the cuticle takes place. There are also numerous other circumstances attending this complaint.

45. This affection of the eye is of difficult management, and is frequently found in persons of a scrofulous diathesis; in children of large towns, who are ill fed and badly clothed, with little attention to cleanliness. It is a complaint very obstinate in its cure; and if relieved, it generally returns and becomes bad as ever.

The affection is not, however, confined to the lower classes, but the higher and middling ranks of society are sometimes attacked with it; those who are of the scrofulous diathesis. In schools also it will be found; it frequently arises from the irritating matter being applied to the lid, which may be conveyed from one to another, by using the same towel, or in some such way.

46. *Treatment:*—The treatment of psorophthalmy does not essentially differ from that of the strumous; it is an inflammation without power; one of the atonic kind. Your remedies must be both constitutional and local.

Depletion must not be pursued to any extent. It will be right when any symptoms of irritation are present, to remove them by the application of leeches, and gently opening the bowels by mild aperients, combined with mercurial medicines, such as calomel, the hydrargyrus cum cretâ, or the blue pill, and in quantities so as to give tone to the system. When any

febrile excitement that may have existed is removed, begin with tonic remedies; that is, when the skin is clean, and the secretions from the bowels are regular in their quantity and quality.

The applications to the part should consist of stimulants, and the best form in which they can be employed is that of ointment. Any of the milder stimulating mercurial ointments will do; and their degree of strength must be regulated by the effect on the eye. The use of the vinum opii will be attended with beneficial results, and the application of blisters will have an universally good effect, but they should always be healed immediately, and repeated again if required.

47. The *consequences of inflammation of the eye*, requiring distinct notice, and which are accompanied with an equal or less inflammation of the conjunctiva, and kept up or excited by attendant circumstances, are now to be spoken of.

OPACITY OF THE CORNEA.

48. Opacities, or specks of the cornea, may be divided into several kinds or species.

Those which are caused by the altered or more condensed state of the inner lamellar secretion, are denominated by Beer, *Macula corneæ simplex obscuratio*; otherwise *nebula*;—those depending upon the formation of a pseudo-membrane, are more appropriately termed *leucoma*;—and the third variety, or that in which the lamellæ are firmly united with each other, or the conjunctiva, he has termed *albugo* or *cicatrix*.

49. *Nebula:*—Nebula or simple opacity of the cornea, is recognized by a diffused cloudiness of the whole or part of the cornea; it has no distinct or circumscribed boundary, but gradually looses itself in the transparent part of the tunic.

The opacity appears always greater in its centre, declining steadily towards its circumference. It seldom attacks the deeper lamellæ, but is seated commonly directly beneath the conjunctiva. The obscurity of the cornea is never so great as to conceal the pupil or iris; and the vision, on this account, is never totally destroyed, but only rendered less clear and distinct.

50. *Leucoma:*—In this kind, the opacity is more circumscribed, and of a whitish, chalky, or pearl colour.

If it be deeply seated, it will assume a polished or shining lustre; if more superficial, or beneath the conjunctiva, the colour is more dull. In both cases, there is a considerable degree of nebula surrounding the opacity. Where the disease occupies the centre of the cornea, so as to obstruct the entrance of the rays of light into the pupil, the patient is rendered completely blind. Sometimes one half of the pupil only is obscured, and the patient still enjoys very tolerable sight through the diaphanous portion, the sphere of vision is simply contracted. He will always see better in the twilight, or in an obscure chamber, than in the broad glare of day, because the pupil being expanded, permits a greater number of rays to enter the retina.

51. *Albugo:*—This species differs no less in form and colour from the two other varieties than in the cause which produces it; being always the consequence of a wound or ulcer of the cornea.

Its form is infinitely varied. Not unfrequently the iris will be found united with the cornea at the point of the albugo, so that the pupil is considerably distorted or drawn from its natural position. The cornea is sometimes seen completely studded over with these cicatrices, so that it has lost in a great measure or altogether, its transparency and convexity.

52. Opacities or specks of the cornea may always be traced to previous inflammation of this tunic.

Those varieties of ophthalmia, which are connected with some peculiar diathesis of system, are most disposed to terminate in this way. Any accidental or artificial wound of the cornea will cause a nebulous or leucomatous cicatrix. Opacities of the cornea are also often caused by the contact of acrid, or strongly corroding substances with the eye.

53. *Treatment:*—The inflammation in these affections is generally of the chronic kind, and arises from a relaxed state of the

vessels, which require stimulating applications, in order that they may recover their tone and convey the blood uninterruptedly.

If the vessels be stimulated, the blood will be likely to flow through the veins; the absorbents will be excited, and remove the effused lymph. If there is considerable inflammation, it must be removed by active means; and in these cases it will be proper to deplete.

54. Care must be taken that in the treatment, no undue degree of stimulus be employed; if there should be inflammation it will be increased, and the complaint be as bad as ever.

By stimulating applications, the cornea will frequently be restored to the same transparency as before the attack. A good stimulus which may be used, is one with the sulphate of zinc, containing about a grain to an ounce of water, gradually increased in strength.

PUSTULES.

55. Pustules are generally seated at the junction of the transparent with the opaque cornea; but they sometimes occur in the cornea itself, or on the conjunctiva covering it or the ball. They are seated in different parts.

The appearances they present at first, are red or yellowish spots arising from a deposit of lymph in those parts, and are slightly elevated. There is considerable turgescence of the vessels around them. If they occur on the cornea, it will be nebulous and opaque; the vessels around the cornea will be seen distended, carrying red blood, and having a radiated disposition.

56. If the lymph secreted in this complaint, is not absorbed, the pustules break, matter escapes, and ulcers form in their place.

Sometimes there is only one of these ulcers, frequently two, one on each side of the cornea, just at the junction of the transparent with the opaque

cornea, and occasionally the cornea is encircled by them. They are very difficult to cure, and easily re-produced.

57. *Treatment:*—As for the treatment which pustules require, if there should be much inflammation, you must deplete; but as the inflammation is of the chronic kind, depletion must not be pursued to too great an extent at the outset. The system must be invigorated by tonic remedies, and tone given to the vessels of the part.

First, apply leeches, not in too large numbers; evacuate the bowels by mild aperients; and attend to the secretions: blisters will be useful if the sight be affected. When the state of the bowels has been regulated, you must begin with tonic remedies, and as early as possible, with astringent collyria, and the best is the vinum opii.

FUNGUS OF THE CONJUNCTIVA.

58. This appearance of the conjunctiva, is the result of purulent ophthalmia, and occurs in diseased persons.

The conjunctiva becomes loose and red, the vessels turgid with blood, and there is a fold of this membrane on the inside of the lids, which produces considerable irregularity on its surface; a morbid secretion is kept up on the part, and not unfrequently eversion of the lids is the result.

59. *Treatment:*—The treatment of this state of the conjunctiva, consists in the simple excision of the diseased part.

Whilst the lids are separated by an assistant, the surgeon, raising the projecting portion with a pair of forceps, removes it at a single stroke, with a common lancet-shaped knife, or the curved scissors. When there is any tendency in the disease to form anew, the divided surface may be rubbed slightly over with the sulphate of copper or lunar caustic.

GRANULATIONS OF THE CONJUNCTIVA.

60. These are nothing more than loose irregularities of this membrane, where it lines the lids.

These projections continue to pour out a morbid secretion, which stimulates and irritates the whole eye; the palpebral conjunctiva becomes altered in its texture, and its surface is covered with a fleshy elevation, having the exact appearance of granulations. These granulations covering the surface of the conjunctiva lining the lids, are constantly rubbed over the globe of the eye whenever it moves, producing pain and irritation, and keeping up morbid secretion, and, in fact, giving rise to chronic ophthalmia.

61. ***Treatment:***—Granulations of the conjunctiva, if not removed or remedied, produce ultimate blindness.

Cases of this complaint are difficult to cure; and the remedies you are to use are, caustic applications and the division of the varicose and enlarged vessels. These may be aided by setons, issues, blisters, and attention to the general health.

ENCANTHIS.

62. This consists in an alteration of the structure of the caruncula lachrymalis, and neighbouring semilunar fold of the conjunctiva.

In this complaint, the caruncula is enlarged; at the commencement it has a granulated appearance, which it loses as it increases, and then becomes similar to a hazel nut, being ash-coloured and streaked with varicose vessels. This enlargement or excrescence prevents the lids from closing, and allows extraneous matter to enter, which keeps up inflammation of the eye, and it also presses on the puncta lachrymalia, and turns them out of their place: the tears, thus prevented from getting into the lachrymal sac, are effused on the cheek.

63. *Treatment:* — The best treatment you can adopt for the cure of this complaint, is the entire removal of the diseased part.

The operation should be thus performed: an assistant is to raise the lid, you then take up the tumour with a pair of forceps, and remove it with a pair of curved scissors with convex edges.

64. When this complaint has not assumed the malignant form, it is always remediable by excision. Never operate, however, when the encanthis has become of the malignant kind, and put on the cancerous appearance.

This will be known by the dull red colour of the excrescence, its excessive hardness, lancinating pains extending to the eye-ball and forehead, particularly when touched, foul ulcers with irregular edges, having all the appearance of cancer in other parts of the body.

PTERYGIUM.

65. This term is generally applied to a preternatural, reddish, ash-coloured, triangular little membrane, which most frequently grows from the internal angle of the eye, near the caruncula lachrymalis, and gradually extends over the cornea, so as to cause considerable impediment to vision.

This disease most frequently originates from the internal angle of the eye; and it was this circumstance, which induced the belief, among the older writers, of its being a mere expansion, or growth from the membrana semilunaris, or caruncula lachrymalis. It is sometimes seen to proceed from the external canthus, and more rarely, from the superior or inferior hemispheres of the eye-ball.

66. The disease has been divided into two species, the *pterygium tenue* or membranous pterygium; and the *pterygium crassum* or fleshy pterygium.

The disease most commonly appears, and runs its course without the slightest pain.

67. *Membranous Pterygium:*—This kind has the appearance of a thin film of minute vessels converging towards the cornea.

The usual seat of this affection is towards the inner canthus, that is, with the base at the canthus, and the apex against the cornea. It is always of a triangular shape, and the vessels proceed from the base to the apex.

68. *Fleshy Pterygium:*—The fleshy pterygium differs from the membranous, and is more vascular.

They first appear of a yellowish colour; then the vessels running through them become large, and they have a red appearance; but always retain their triangular shape.

69. *Treatment:*—When a pterygium has proceeded far on the transparent part of the eye, the only treatment to adopt will be the removal of a part of the pterygium.

This consists simply in raising the membrane as near as you can to the cornea, and cutting it through whilst suspended. When the pterygia are fleshy, more care must be taken in dividing them; they must be divided more towards the margin of the cornea, and turned back from the apex to the base.

SECTION II.

SIMPLE INFLAMMATION OF THE DEEPER SEATED TUNICS; THOSE OF THE GLOBE OF THE EYE; THE CONSEQUENCES OF SUCH INFLAMMATION, AND THE NECESSARY PLANS OF TREATMENT.

INFLAMMATION AND ULCERATION OF THE CORNEA.

1. *Inflammation:*—At the outset, in inflammation attacking the transparent cornea, there is a hazy appearance, the cornea loses its natural lustre, and in a short time there may be discovered on its surface, vessels carrying red blood, and then the symptoms will be the same as those of inflammation in general; the patient will complain of intolerance of light, and also have effusion of tears.

2. If the inflammation of the cornea should continue, matter very frequently forms between its lamellæ, and the appearance which it then assumes is called *onyx* or *unguis*, from its resemblance to a nail; the matter is to be very distinctly seen in the transparent part of the eye, and gradually extends till it occupies one-third or fourth of the cornea.

If you place the eye in profile, you can generally observe yellow spots, which are usually seated at the anterior part of the cornea, and if you employ gentle pressure with a probe, the fluid may be felt fluctuating within. In the various positions of the head, the matter does not shift its situation, but remains in the same spot.

By proper treatment, the matter often becomes absorbed; but it not unfrequently makes its way externally, or an opening is formed internally, and the matter then is effused into the anterior chamber of the eye.

3. *Ulceration:*—Ulceration of the cornea is the common consequence of inflammation of the cornea; but it is very frequently produced by the contact of matter in purulent ophthalmia; or, in fact, any irritating substance, mechanical or chemical, that may be introduced into the eye. The inflammation produces the formation of pus; this breaks and an ulcer is formed.

In ulcers of the cornea, you will find the edges rugged, uneven, and elevated, the ulcer itself having an ash-coloured appearance, and the patient complaining of great pain; there will also be a discharge of a good deal of acrid and irritating matter. In general there will be no difficulty in distinguishing ulcers of the cornea; all you have to do, is to put the eye in profile, and take a side view of this organ, and you will see the ulcer with the appearances I have described.

4. The situation of ulcers of the cornea varies; as also do the ulcers vary in their appearance.

Very frequently these ulcers are at the superior portion, and affecting only the external lamellæ; in other cases, spreading over the whole cornea, and penetrating into the anterior chamber, by which means the aqueous humour escapes, and the iris is often protruded; sometimes even the opening becomes enlarged, and the crystalline lens and vitreous humour escape. Some ulcers are large and others small, and those which are small, on cicatrization, do not materially obstruct vision, whilst those that are large, when healed, produce a nebulous appearance, which destroys the power of sight.

5. *Treatment:*—The treatment required in inflammation of the cornea does not materially differ from that of inflammation of the conjunctiva, or any other part of the eye.

You must rely upon the efficacy of a strict antiphlogistic plan, and when the acute inflammation has been subdued, on the use of mild astringent collyria.

6. When ulcers form in any part of the cornea, it will be proper to use active means, if they are accompanied with acute inflammation; but most frequently, they are accompanied by

chronic ophthalmia, and have a disposition to spread rather than heal.

When they are of a spreading disposition, astringent lotions will be of great service; but of all remedies in ulcers of the cornea, the nitrate of silver is the one on which you are to depend: it is generally used in the state of solution, about two grains to an ounce of water; or it may be better to begin with a grain to an ounce, regulating the strength in proportion to the degree of irritation it may produce.

When ulcers of the cornea are attended with acute inflammation, it will be necessary to employ bleeding, by leeches, before the use of astringents, and at the same time to keep the bowels regular by mild aperients.

During the progress of the ulcers, it will be necessary to watch them very closely, and examine them frequently; but in doing so, great caution must be used lest the eye-lids become everted.

7. When ulcers of the cornea heal, it is by cicatrization, as in any other part of the body.

The specks which are left upon cicatrization, are nothing more than rounded spots of coagulable lymph, and constitute the *albugo* we have already described.

STAPHYLOMA.

8. Staphyloma is that disease of the eye-ball, in which the cornea loses its natural transparency, rises above the level of the eye, and even projects beyond the eye-lids, in the form of an elongated, whitish, or pearl-coloured tumour, which is sometimes smooth, sometimes uneven, and according to Scarpa, attended with total loss of sight.

This disease is justly considered as one of the most serious to which the eye-ball is subject; for, to the total and irremediable loss of sight that it occasions, are added, all the evils which necessarily result from the bulk and protruberance of the staphyloma. In such circumstances, the continual exposure of the eye-ball to the contact of the air, and particles of matter suspended in it; the friction of the eye-lashes; the incessant flux of tears down the adjacent cheek; render the eye painful and inflamed; the sound one is affected by sympathy, and the diseased one at length ulcerates, together with the lower eye-lid and cheek, on which it presses.

9. Staphyloma appears to proceed principally from purulent ophthalmia, or from the small-pox.

Scarpa observes, that infants are often attacked with this disease soon after their birth, and mostly in consequence of purulent ophthalmy. It is also produced by the small-pox, yet never during its eruption, nor during the stage of suppuration; but, when the pustules dry, and even after the detachment of the variolous scabs.

10. *Treatment:*—In this complaint, nothing can be done for the restoration of sight; and the only plan of treatment will be to remove the staphylomatous part, so as to return the eye within the orbit, and permit the use of an artificial eye.

The operation is exceedingly simple: the surgeon first passes a needle with a ligature, through the staphylomatous part, in order to steady the eye; and then, with the other hand, takes the cornea knife, and removes as much of the projecting part as may be necessary; the operation gives little pain; it generally happens that the iris adheres to the cornea, and that a portion of it is removed. The crystalline lens escapes, together with a portion of vitreous humour, and the eye collapses, so that when the part is healed, an artificial eye may be worn.

IRITIS.

11. Inflammation of the iris is a peculiar and specific inflammation, attended with symptoms which, in some cases, are with difficulty recognized.

In looking into the eye, you see the iris changed in colour, or having a brownish hue, or rather a reddish brown colour, (this, however, varies according to the natural colour of the iris,) from the increased number of vessels on its surface carrying red blood. The iris itself is altered in texture, being puckered and thickened. These appearances are soon removed, and deposits of yellow lymph, resembling yellow tubercles, will be seen on the iris, the pupil becomes irregular and altered in shape, and the pupillary margin of the iris thickened and turned back towards the posterior chamber. These are the principal symptoms by which you recognize iritis; but there are many other marked appearances.

12. Inflammation of the iris often comes on from very slight causes; it occasionally happens in those who have been under the influence of mercury, and in persons of a scrofulous diathesis.

Iritis has, in consequence of its occurring so frequently after syphilis, been classed as a secondary symptom of that complaint; I have, I must say, considerable doubt on the subject, for I have never met with it in a person labouring, at the same time, under any other secondary symptoms of syphilis, with eruptions or nodes on the bones; and also I have never met with a case of iritis after syphilis, but where mercury had been previously given, and therefore I cannot say whether the inflammation of the iris was the effect of the mercury, or of the original disease for which it was given.

13. *Ophthalmitis:*—Iritis is not unfrequently accompanied by inflammation of the tunics of the eye, which may be called ophthalmitis, or deep seated inflammation of the globe of the eye.

In this complaint, the sclerotic appears reddened, the cornea is dull, and the capsule of the lens itself becomes opaque: all these participate in the inflammation. There is a deposition of lymph on the edges of the iris, and there are also adhesions of it in some places to the crystalline lens. The sclerotic coat, however, is particularly inflamed; the vessels may be seen carrying the blood in a straight course, whilst those of the conjunctiva are tortuous. There is pain in the eye, intolerance of light; so that these symptoms, together with a turbid state of the humours, are sufficient to inform one of the presence of inflammation of the sclerotic coat; the patient also labours, at the same time, under great febrile excitement.

14. The result of this severe form of inflammation, if it be not checked, is effusion of lymph or matter into the anterior

chamber of the eye, producing what is technically called *Hypopium.*

In these cases, the matter may be easily observed, and sometimes there is so much as to conceal the edges of the pupil and the iris.

15. *Treatment:*—In the treatment of iritis, you must, of course, adopt all the steps of depletion as in other inflammations of the eye; but in addition to these, there are also one or two other remedies.

There is one remedy above all others on which you are to rely, and that is mercury: it must be given so as to effect the constitution, till the gums and mouth are sore, or the saliva begins to flow, which will be the signs of it, and the best form in which you can give mercury is that of calomel; let it be given internally after the bleeding, in the dose of two to three grains, combined with about a quarter of a grain of opium, so as to prevent its acting on the bowels. In order that the calomel may effect the system, it must be given every four or six hours, till the mouth is sore; in more chronic forms of this complaint, it may be given less frequently. As soon as the system has become affected, you will see the zone of vessels disappearing, the lymph absorbed, the aqueous humour becoming clear, and the cornea losing its hazy appearance.

Other remedies have been recommended, but there is not one on which you can rely, but the exhibition of mercury. Belladonna will be found a very useful adjunct in this complaint; by dilating the pupils, the adhesions are often prevented from forming between the iris and capsule of the crystalline lens, and when they are formed, it tends to elongate the adhesions. The belladona should be applied in the form of extract, around the eye, morning and evening.

AMAUROSIS.

16. By amaurosis I mean partial or total loss of vision, arising from paralysis of the optic nerve or retina; and this is produced by a congestion of the vessels of the part, or minute alteration of its structure.

The persons subjected to this complaint, are those who have been in the habit of viewing minute objects, or exposing the eyes to strong light; and those who are affected with amaurosis, are frequently troubled with false appearances, as flashes of light, or balls of fire before their eyes.

17. The symptoms of this complaint are few, and therefore require to be well known.

The pupil is generally dilated and motionless; the iris is nearly immoveable, and acts very little, and vision is completely destroyed. There is also slight strabismus. There is frequently the sensation as if a cloud were before the eye, which is termed *caligo*, and there is often a greenish appearance of the humours, which is named *glaucoma*. This depends on an alteration of the lens, or an alteration in the structure of the vitreous humour.

18. *Causes:*—The causes of amaurosis I shall divide into three parts; those which affect the retina or optic nerve; those affecting the brain, or that part of it from which the optic nerve arises, the thalami nervorum opticorum; and, lastly, those affecting the body at large, or some particular organ, and thus sympathetically affecting the eye.

First: the structure is sometimes altered by disease or violence, laceration from wounds, blows, the changes from inflammation, pressure from tumours, accumulation of the humours of the eye, paralysis from exhausted sensibility, as by the frequent viewing minute or brilliant objects, too strong light, the use of magnifying or telescopic glasses, or suddenly by a strong transition from darkness to light, as that of the sun, lightning, &c.

Second: the second class of causes consists of affections of the brain, such are plethora, an increased action, a fulness of the vessels of the brain, and from pressure on the brain from tumours, apoplectic effusion, hydrocephalus, injuries to the head, &c.

Third: the third set are those causes, which, operating through the nervous system, depend on some condition of the body at large, or irritation in a distant part. Such are general debility, palsy from lead, irritation in the primæ viæ from disorder of the biliary secretions, or digestive organs generally, worms, &c.

19. *Treatment:*—Although the prognosis in this disease is

unfavorable, yet we are not to give up all hopes of benefit from treatment. It is, however, especially necessary to distinguish those cases which admit of cure or amendment, and to ascertain in these the cause upon which the affection depends.

In those cases of amaurosis which are accompanied by, or dependent upon inflammation of the organ, the active antiphlogistic treatment requisite for that condition may relieve the retina. In those cases in which it depends upon plethora, congestion or action of vessels in the brain, the appropriate treatment for such disorder, will suit the amaurosis. In cases where the disorder is in the primæ viæ, the clearing of the stomach and intestines, and the restoring of its healthy secretions, will be the indications. Where the amaurosis depends upon debility, the use of bark and other tonics and stimulants, will be requisite. In cases which depend upon some paralytic or torpid state of the part, we use stimulants (the liquor ammoniæ puræ, of which the vapours are directed against the eye), friction on the eyebrows, stimulating liniments, sternutatious powders, blisters, electricity, and, in some cases, manifest advantage has been derived from a mercurial course.

20. Whatever may be your plans of treatment for this complaint, you will find that there are many cases incapable of cure, many others which are but slightly benefitted, and that the cases most likely to be successful, are those depending upon some obvious and remediable cause, and those only when incipient.

SECTION III.

DISEASES OF THE HUMOURS OF THE EYE; CATARACT; THE OPERATIONS REQUIRED FOR THAT DISEASE; FUNGUS HÆMATODES, ETC.

HYDROPHTHALMIA.

1. Hydrophthalmia, or dropsy of the eye, arises in this organ precisely as in the other cavities of the body, and depends on some inequality in the condition of the secerning and absorbent vessels.

It seldom occurs as a local or independent disease; more commonly it is the effect of a certain weak or cachectic state of the whole system, or it is symptomatic of some other dropsical affection.

2. The disease may arise from an increased accumulation of the aqueous or vitreous humours, or both.

3. *Dropsy of the Aqueous Humour*:—Is known by its protrusion forwards, and by other diagnostic indications.

The cornea increases considerably in size; the anterior chamber is much enlarged; the iris is sluggish, and becomes of a darker hue; the patient complains of a sensation of pressure or constriction of the globe; and by degrees loses his power of vision. When the disease advances to such a state that the eye-ball is considerably protruded beyond the orbit, there will be other symptoms resulting from its exposed situation.

4. *Dropsy of the Vitreous Humour*:—In this species, the

enlargement of the eye takes place chiefly from behind, or in the posterior part of the ball.

The iris is arched forward, and brought almost into direct contact with the cornea, so that the anterior chamber is nearly or completely obliterated. Its colour remains unchanged, but the pupil is rather more contracted than in its ordinary state.

5. *Treatment:*—The remedies recommended for this complaint are various, of the most opposite kind, and have been tried generally without any good effect.

Knowing so little of the true causes of hydrophthalmia, it is difficult to prescribe any systematic course of treatment, or to expect much benefit from any particular mode of cure. Nothing, indeed, can be done to prevent the blindness which inevitably follows the more advanced stages of the disease, or to alleviate it when it has actually taken place; and the utmost the surgeon can do, is to quiet the uneasy sense of distention or constriction, which the patient feels, throughout the orbit, or to arrest the further progress of the complaint.

6. Where the disease is symptomatic only of a general hydropic state, our remedies should be adapted more to the general than to the local affection.

Of these, says Mr. Welbank, perhaps the most efficacious, are, calomel, cicuta, or the pulsatilla nigricans. Professor Beer prefers a combination of calomel with digitalis. In addition to these, we may resort to blisters, issues, stimulating and mercurial friction to the eye-brow, &c. Instead of the astringent or stimulating collyria, so much employed, nothing more should be advised than the covering the eye with a fold or two of warm dry linen, rubbed over with a little camphor, or some other aromatic substance.

7. If, however, the disease be far advanced, or produces an unpleasant tension in the eye, it will be necessary to draw off the superabundant fluid.

The operation of paracentesis is performed with a common lancet, which should be thrust into the cornea a line from its margin; and the fluid evacuated by slight pressure upon the eye-ball. The eye should be kept in this state of collapse for days, or even weeks, by lifting the flap daily, and permitting the fluid to escape.

GLAUCOMA.

8. In this complaint, the vitreous humour becomes altered in texture, more dense, and presents a sea-green hue, and the pupil is dilated.

Glaucoma is often mistaken for cataract, and a person affected with it is frequently supposed to have a cataract in its incipient stage. On examining the eye minutely, this greenish appearance may be observed to be behind the crystalline lens, and posterior to the seat of the cataract; it may, however, be mistaken for many diseases, but has a greater resemblance to cataract than any other.

9. Glaucoma is generally the sequela of gouty ophthalmia, or it may arise spontaneously, and without much previous inflammation.

It is always connected, however, with morbid changes in other parts of the body, which may be traced to the same arthritic diathesis.

10. Glaucoma, when fully developed, is incurable.

The remedies upon which most reliance is placed for arresting or controlling the disease, are, local and general blood-letting, purgatives, blisters to the temples, or behind the ears, warm aromatic application to the eyes, &c.

CATARACT.

11. By cataract is meant, an opacity of the crystalline lens, or its capsule: the cataract depending on a morbid secretion of the liquor morgagni being very rare.

12. The symptoms of cataract are unequivocal, and may be easily recognised.

At first, there is always defect of vision, and the patient sees things as through a mist, and requires a strong light to see them plainly; this symptom changes during the progress of the complaint, the patient being able to see better in a moderate than a strong light, and then a speck or opacity in the lens or capsule, may be distinctly observed; it is generally in the centre of the pupil, and at the situation of the lens; this gradually enlarges, and in proportion as the opacity increases, the sight becomes more dim, and the capability of discerning objects diminishes.

These symptoms of cataract differ in the different kinds; and the diagnostic marks of each, we shall hereafter speak of.

13. There are four kinds of cataract: viz. the hard or firm; the milky or fluid cataract; the soft or caseous; and besides these, there is a fourth kind, the capsular cataract; the three first forming in the lens itself, and the last in the capsule. There is also a congenital cataract.

14. *Firm or Hard Cataract*:—In this kind of cataract, the lens acquires a greater degree of density or firmness than natural; and, in undergoing this change, it becomes smaller and thinner, and more concentrated.

This cataract is to be known by its amber colour and size; by the interspace between the iris and front part of the lens, on account of the lens becoming thinner; the motions of the iris are free, there being no adhesions; the vision more or less perfect; and, lastly, by its occurring at an advanced period of life.

15. *Fluid or Milky Cataract*:—This kind of cataract is always more or less fluid, and of unequal density throughout. It is called milky, from its white colour.

If you examine the eye of a patient with attention, you will see that it has a flocculent appearance, from specks or streaks consisting of solid particles of the lens, and these will move up or down in the various positions and motions of the head, and be removed out of sight; but on the head becoming

steady, they again appear. Besides these symptoms, the lens becomes enlarged and globular, and the increase of size is such, that the lens reaches to the iris, so that there is no posterior chamber at all. The size and shape of the pupil is altered; the rays of light do not pass into the eye; and the patient can scarcely tell the difference between light and darkness.

16. *Soft or Caseous Cataract:*—This kind of cataract is of the consistence of firm jelly or cheese. It is uniformly opaque, and there is a milky whiteness, as in the fluid cataract; but the spots and streaks sometimes observable in this form never shift their position, as in the other; the lens also becomes increased in size.

In this cataract, the posterior chamber of the eye is obliterated; there is no interspace between the fore part of the lens and iris; the motions of the iris are performed with difficulty, from the size of the lens, and the rays of light are prevented from entering. The patient sometimes cannot distinguish between light and darkness, although they are seldom so blind as this.

17. *Membranous or Capsular Cataract:*—This form of cataract is not connected with the lens, but the capsule itself. It usually comes on after an operation, or in consequence of it.

The membranous cataract is also found in children, when it is called *congenital cataract.* It does not differ essentially from the other forms of capsular cataract; but is called congenital on account of its occurring at a particular period of life, or children being born with it.

18. In membranous cataract the opacity or affection may exist either in the posterior or anterior layer of the capsule, or combined with that of the lens, and thus produce cataract.

In the last case, there is no distinct mark of diagnosis; but when the capsule only is affected, you may offer an opinion. If the anterior layer of the capsule is opaque, it has the appearance of being superficial and close to the pupil, and appears rather nebulous. It does not quite lose its transparency, but becomes semi-transparent. When the posterior layer is affected, this appearance is deeper; being at a considerable depth, and

having more or less of a concave form. There are also striæ passing in a radiated direction.

Another species of membranous cataract is, when the capsule becomes opaque, and the lens, at the same time, absorbed, and a tough, dense, membranous substance is formed, as in congenital cataract.

19. *Congenital Cataract:*—Children are not unfrequently either born with cataract, or with a disposition to cataract, which speedily makes its appearance. The nature of the cataract may be firm, soft, or fluid; and it may be lenticular as in the adult. It seems to be hereditary.

The appearance of congenital cataract is somewhat different from cataract in the adult; there is an opaque nucleus either at the centre or some part of the circumference, and the rest has an unequal opacity, or streaked reticular appearance. And there is also a remarkable unsteadiness of the globe of the eye.

20. We have now gone through the variety of cataracts, and offered the marks of diagnosis, from which you will see the difficulty of distinguishing one from the other.

But it is necessary, as far as possible, to be acquainted with the appearance each form of cataract presents, as the treatment or operation required must be adapted according to the kind of cataract.

21. *Causes of Cataract:*—By far the greater number of cases of cataract are produced, as it is called, spontaneously, or under circumstances which are too subtle for our cognizance. Sometimes, however, the cause can be fairly discovered.

Cataract sometimes arises from obvious causes, as injury, violence, inflammation, or sharp-pointed bodies wounding the capsule of the lens, or the lens itself; and consequently producing opacity of these parts. The opacity arising from this cause often becomes absorbed, and the case undergoes the natural process of cure without requiring an operation. It also runs through families, and appears to be hereditary; and it is likewise said to arise from other causes.

22. *Treatment:*—There are certain symptoms accompanying

cataract, by which you are enabled to form a pretty accurate opinion as to the issue of an operation.

Various plans of treatment have been adopted for the removal of cataract, but without success; an operation is only to be depended on.

23. There are four particular circumstances which should lead you to determine as to the success of the operation.

First:—Whether the loss of vision has been gradually supervening, and has always been in proportion to the opacity of the lens.

Second:—Whether the cataract has been accompanied by chronic ophthalmia, or any changes have been produced in the eye by it; if the cataract has been attended by a penetrating pain in any part of the eye, or orbit, or back of the head, which it will be necessary to inquire about.

Third:—Whether the motions of the iris are duly performed, in the different variations of the light; if not, fear may be entertained of the eye being amaurotic.

Fourth:—If there is the power of distinguishing between light and dark, or the colour or forms of things, or the shade of passing objects.

24. These circumstances should be particularly inquired into; and if you find the patient has all, or the greater part of them, then you may operate.

That is, if the defect of sight has been increasing just in proportion to the increase of the opacity of the lens; the patient has had no pain in the head; the motions of the iris are free, and light can be distinguished; you may operate, and with the chance of success, as there are no evident reasons against it; for, by the *first* circumstance, you see that the vision has been impaired in consequence of the opacity of the lens; by the *second*, that there has been no disorganizing inflammation in the eye, or that the brain and origin of the optic nerves have not been affected; by the *third*, that the retina is sound; and by the *fourth*, if the opacity of the lens be removed, that the retina will be in a state to receive the impression of external objects.

25. When there is cataract, the operation must be regulated by taking all the circumstances into consideration.

By the figure of the cataract; whether there are any adhesions of the iris to the capsule of the crystalline lens; and especially by the patient being

able to distinguish objects, and light from darkness. On the whole, the latter is a very favourable symptom, and when present, the operation may be performed. If the case is doubtful, it is better to operate; but previously represent the circumstances to your patient.

26. Another question with regard to the treatment of cataract, is whether the operation should be performed, if one eye only is effected.

Some recommend the operation when only one eye is affected; but for my part, the best plan is not to operate, except both are affected; for if you do it when there is only one eye diseased, the focus will be made different by the operation, and the patient will not be able to use both eyes at the same time.

OPERATIONS FOR CATARACT.

27. The operations for cataract are three in number; first, *depression* or *couching*, by which the cataract is removed from the axis of vision; second, *extraction*, which consists in making an incision through the cornea; and lastly, the operation for *the solution* of the cataract.

28. *Depression or Couching:*—This mode of operating consists in removing the opaque lens out of the axis of vision by depressing it into the vitreous humour.

This is done by a needle, of which there are three different kinds now employed, Hey's, Scarpa's, and Beer's, which last is spear-pointed and narrow at the neck. The needle is the only instrument required; some use a speculum, but, excepting in children, this will not be of much use. I give the preference myself to Beer's needle: a surgeon is not so likely to wound the ciliary ligaments or processes with it.

29. Previous to the operation, you should ascertain whether the patient is in good health, the bowels regular, and that all the

functions are properly performed. And when you are about operating, the light, and the position of the patient and operator, are extremely important, and ought to be attended to.

The light should be clear, distinct, and full, but not vivid, and it should not fall on the centre of the eye of the patient, but laterally, else it would produce a dazzling and unsteadiness of the organ. The patient should be placed on a low seat with a high back, and the head resting against it or the body of an assistant. The operator should be on a high stool, or at least of sufficient height to enable him to put one foot on it, and rest his elbow on the knee opposite to the eye to be couched.

30. Having gone through the preparatory steps to the operation, we will now consider the mode of operating itself.

The operator holds the instrument between the thumb and fore-finger; the assistant, passing his fore-finger round the head of the patient, raises the upper lid by a fold of skin, and presses it gently against the superciliary ridge; the patient is now desired to look inwards, towards the nose, and the operator, resting his little finger on the upper part of the chin of the patient, penetrates the sclerotic coat about a line and a half from the juncture of the transparent with the opaque cornea, and a line below the transverse diameter of the eye. In the first place, the needle is introduced here, just where the retina terminates, and the ciliary ligament commences, so that these shall be avoided; and secondly, for the purpose of not wounding the ciliary artery, as it goes along the middle of the external convexity of the eye-ball, between the sclerotic and choroid coat. In using Beer's needle, it is introduced with the edge laterally, and its surface upwards and downwards, and directed towards the middle of the globe of the eye. It must be moved slightly between the fingers, (a piece of ivory or brass at the handle, shewing the disposition of the cutting edge,) and then the point carried inwards parallel to the iris, and so as to cover the posterior chamber; the instrument will now be visible through the pupil. When this is the case, the operator must raise the needle upwards, and then depress it downwards and backwards, and a little outwards; by which means, the crystalline lens becomes pushed into the vitreous humour. If the lens should rise from its situation, it must be again depressed; and when it is safely lodged in the vitreous humour, the needle must be withdrawn.

The after-treatment is very simple, and consists in a simple fold of linen moistened in cold water, being applied to the eye. The patient is also to be put in a dark apartment, and narrowly watched, in order to see if any inflammation supervenes: very frequently, none arises.

31. ***Extraction of Cataract*:**—This operation is the entire removal of the crystalline lens; and there are several instruments required in its performance.

First, you will require the *cornea knife*; Beer's is the one I recommend, the upper edge of which is quite straight, while the lower edge is made straight and oblique; the whole of the lower edge is cutting; the upper edge is cutting towards the point, and the size is accurately increased from the point towards the handle, so as to fill up the opening, and prevent the escape of the aqueous humour. The next instrument is a pair of *curved scissors*, in order to enlarge the opening made into the cornea, if it should not be of sufficient size to extract the cataract. A minute *curved needle* will be required, in order to scratch the capsule of the crystalline lens; a *curette* or *scoop*, to remove any opaque fragments of the lens; and a pair of minute *forceps*, of which the best construction is that recommended by Beer, to extract any portions of opaque membrane from the capsule of the lens. These are the principal instruments required.

32. There seems no necessity for preparing a patient for this operation, beyond taking care that his bowels be duly evacuated, and that he is not labouring under any other complaint or morbid affection, or has not any unusually stimulating diet previous to the operation.

Let us now consider the operation. The position of the patient should be nearly the same as that in the operation for couching; he should be placed opposite a window, so as to admit a full, clear, but not too vivid light. It should not be a reflecting light, so that if the sun should happen to shine, a north window should be chosen; the inner side of the eye towards the nose, where the point of the knife is to be carried through, should be well brightened. The patient should be seated in a low chair as in couching. The operator should place himself behind the patient in a chair of sufficient height to enable him to plant his foot conveniently on a stool, and resting his elbow on the knee opposite to the eye to be operated upon, bring his hand towards him. The assistant should then place his hand behind the patient's head, and with the extremity of the fore-finger gently raise up the lid without making pressure on the globe. The operator then takes the knife in his right hand, if it be the left eye which is to be operated upon, and in his left, if it be the right eye, in the same way as he would take a pencil between his fore-finger and thumb, resting his little finger upon the malar bone.

The first thing which the operator then does, is to make what is called the

punctuation of the cornea. He introduces the point of the instrument at a distance of half a line from the anterior junction of the cornea with the sclerotic coat, and passes it in a direction nearly parallel to the iris, and before it with a little obliquity through the anterior chamber to the opposite or nasal side. In making the section of the cornea, the knife should be carried onwards, without any downward motion; and as soon as the section is completed, the lid should be allowed to drop over the fore part of the eye to prevent the escape of a portion of vitreous humour, if there should be any spasm of the part, or any unsteady motion of the patient. The operator waits till the eye is quiet, and then introduces the curved needle with a convexity under the flap of the cornea; and turning the point towards the fore part of the capsule, moves it upwards and downwards and laterally from side to side, making a sort of crucial incision. He then squeezes out the cataract, by making gentle pressure on the globe above and below, until the lens is lifted from its bed, and passes through the opening of the cornea upon the cheek of the patient. All that then remains to do is to examine whether there are any opaque fragments of the lens left; if there are, they must be scooped out by the *curette;* if not, the upper lid is to be rubbed over the surface of the cornea. If there is any portion of opaque membrane remaining, it must be removed by the forceps, and in this way the operation will be completed.

33. Many untoward circumstances frequently interfere with the success of this operation, which, for the sake of clearness we will speak of in regular order.

When any unfortunate circumstance happens, you should be perfectly calm, cool, and deliberate; close the eye-lid; consider what is best to be done; and having made up your mind on that point, proceed with firmness and decision in the operation.

34. First:—The section of the cornea may be too small; in which case you will either be unable to dislodge the cataract, or so much force will be required for that purpose as is likely to produce serious inflammation, and such a degree of disorganization as will destroy vision.

The section through the cornea should be about nine-sixteenths of a line, or one-sixteenth more than half a line from its junction with the sclerotica: the point of the instrument is introduced a little below the transverse diameter of the eye, on one side, and should come out a little above it on the

other. If you find, when you have completed the section of the cornea, that the opening is not large, do not hesitate to use the scissors, in order to make it large enough to admit the passage of the cataract.

35. Second :—The second untoward circumstance to which I shall advert, is, the premature escape of the aqueous humour, either from the unsteadiness of the operator, or from some defect in the knife.

On the escape of the aqueous humour, the iris loses its support and becomes prolapsed. When this happens, the way of preventing any mischief will be, not to continue the incision, but to rub the cornea with the point of your finger, by which the prolapsed iris will be stimulated to contract; and on this being removed out of the way, you may complete the incision.

36. Third :—The third unfortunate circumstance which sometimes occurs, is, the loss of a portion of the vitreous humour, arising from some undue pressure on the globe of the eye by the operator or assistant, or from some spasm of the muscles of the eye. It may also occur from other causes.

Another way in which this accident sometimes occurs, is when the needle is injudiciously used too near the circumference of the lens, and the capsule of the vitreous humour is torn through; so that when you make pressure on the globe, instead of the cataract coming forward, a large portion of vitreous humour is protruded. In this case, you should not attempt to force out the cataract, but endeavour to entangle it as much as possible, so as to prevent the escape of the vitreous humour. The escape of vitreous humour is also sometimes the consequence of the curette being passed through the back layer of the capsule. The curette should never be used when the pupil is at all obscured; the field of the pupil should be perfectly distinct, when you resort to that instrument. The loss of a small portion of vitreous humour does not essentially interfere with the success of the operation, neither should it prevent you from completing the operation in the best way possible, by removing all the loose fragments of the opaque lens, and the different portions of opaque membrane or capsule.

37. Fourth :—Another unfortunate circumstance which may interfere with the success of the operation, is, the introduction of

the cornea knife between the lamellæ of the cornea; the consequence of which will be, that the section of the cornea will be very small and imperfect.

These four are the principal circumstances untowardly to your success, but there are many others of less importance.

38. *After-treatment:*—With respect to the after-treatment of the operation of extraction of cataract, your object must be, as far as possible, to prevent inflammation.

A compress of fine linen or cambric, kept wet with cold water, should be applied to the eyes, or rather to the eye opposite that which has been operated upon. The patient should be carried to bed, placed in the recumbent posture, with his head a little elevated, and the room should be darkened. He should be allowed nothing but barley water, tea, or water-gruel, for the first few days; and if there should be any symptoms of inflammation, such as pain, a sensation as if there was some extraneous body in the eye, accompanied with quickness of pulse, a quantity of blood should be immediately taken from the arm. It will be better not to disturb the bandage, or raise the lid to examine the eye, for at least three days, unless the patient should feel any considerable pain or irritation; for in that case, it would be advisable to ascertain the cause, by examining the eye. The patient should be kept in bed in the recumbent posture, for five days, and not even be suffered to rise for the evacuation of the fæces; a bed-pan should be used for that purpose; at the end of that time, he may get up to have his bed made. The best way of preventing irritation, is carefully to avoid making any undue pressure on the globe of the eye. Great care must be taken in adjusting the bandage, not to depress the lower lid, by which means, the section of the cornea may be brought over, and the adaptation of the cut edges prevented.

39. *Solution of the Cataract:*—The third operation is that for procuring solution of the cataract, which is particularly adapted to the cataracts of children, or congenital cataract.

It was formerly deemed advisable to defer the operation for cataract in children, but we are now able to perform one with a hope of success, between the age of eighteen months and four years. But the operation under consideration, is not confined to congenital; it may be employed also in the cataracts of adults, provided they are fluid, soft, or membranous cataracts.

40. The operation is very simple; it consists merely in making an opening in the anterior layer of the capsule of the lens, breaking up, more or less, the texture of the cataract, and admitting the aqueous humour, in which, the cataract is dissolved, and by this means absorbed.

The instrument required is a needle very similar to that employed in the operation for couching; the point, however, is somewhat different; its shoulders are more cutting. It will be right, before operating, to use belladonna, for the purpose of dilating the pupil, so that the cataract may be distinctly seen. A small quantity of the extract of belladonna, softened to the consistence of cream, may be introduced into the eye, or smeared round the lids.

41. Having prepared your patient in this way for the operation, it will be adviseable while operating, not to attempt to do too much at once; but rather to repeat it frequently, than to break up the texture too extensively at once.

In operating on the adult, the patient should be placed in the same position as for couching; children are better placed in the recumbent posture, with the head fixed on a pillow. Sometimes a speculum is required to steady the eye; Pellier's speculum is the best for this purpose. The needle may be introduced either in the same way as in the operation for couching, or else through the cornea. In the latter case, there are two modes of operating, called the anterior and posterior; in the former, the needle is introduced at the distance of half a line from the junction of the cornea with the sclerotica, carried parallel to the iris, and turned inwards so as to break up a portion of the capsule of the lens. In the posterior operation, the needle is carried through the posterior chamber, a little behind the iris, and the texture of the capsule is broken up in the same way, so as to admit of the aqueous humour. If the cataract is fluid, it immediately mixes with the aqueous humour, and you will have no more trouble.

42. As to the after-treatment of this operation, your object must be, as in former cases, to prevent inflammation.

43. Having described these different operations, it may be

necessary to consider which of them it may be most expedient to adopt.

44. It seems to me that in those cases which admit of the operation for *solution;* namely fluid, soft, and most cases of membranous cataract; that operation is greatly preferable to any other.

Soft, fluid, and membranous cataracts cannot be depressed; it is true that the operation for extraction might be performed, but it is to be considered that the operation for solution is much more easy, and that it does very little injury to the part.

45. In firm cataracts, where it is a matter of indifference whether the operation for depression or extraction should be performed, that for *extraction,* supposing it to be equally well performed, is undoubtedly preferable, because the disease is entirely removed by it.

It is not always, however, a matter of indifference, for there are many cases in which it would be extremely imprudent to attempt the operation for *extraction,* as, for instance, in cases of adhesion of the iris to the cornea, or where the cornea is very flat, and the anterior chamber necessarily small, or in cases of contraction of the pupil, myosis, or arcus sellis.

46. Where there are no contra-indications to deter us from performing the operation for *extraction,* it is undoubtedly the most effectual, provided the surgeon has had sufficient opportunities of acquiring dexterity; but if he has not been much in the habit of performing the operation, I should recommend as the safer, though less effectual course, the operation for depression.

OPERATION FOR ARTIFICIAL PUPIL.

47. Where, from some defect of the cornea or iris, or the parts connected with them, there is no passage for the rays of light, the operation for artificial pupil is required. This consists in making a section with a cutting needle, through the iris, which, by the elasticity of its fibres, separates its edges, and thus makes a passage for the rays of light.

There are three modes of performing this operation. *First:*—By a simple incision of the iris, technically called *corotomia;* but this operation was seldom resorted to. *Secondly:*—Where a portion of the iris was cut away, which operation was called *corectomia;* and *thirdly:*—Where the iris was turned away from its attachment to the ciliary ligament, technically called *coredialysis.*

FUNGUS HÆMATODES OF THE EYE.

48. This malignant fungus is a disease which soon proves fatal, unless an operation be early performed: even the chance of success is extremely doubtful. No age appears exempt from it; but it more frequently attacks the young; and a large portion of the cases occur before twelve years of age.

On looking into the eye at the commencement of this complaint, you see opposite to the pupil, and deeply seated, an appearance like a mirror, resembling an opacity of the lens, from which it is difficult to distinguish it. If you watch the progress of the disease, you will see that this appearance enlarges into a prominence, proceeding from the bottom of the eye towards the cornea, and as it reaches the lens, you must be the more on your guard, that you do not mistake it for cataract. There is one appearance, however, at this stage, by which you may distinguish the one from the other; upon the opaque substance, or the retina, of which its covering consists, branches of the arteria centralis retinæ may be seen ramifying. The other symptoms are loss of vision, and the iris remaining immovable. As the prominence enlarges, the iris becomes protruded, and the cornea distended. The conjunctiva becomes inflamed, the eye-lids vascular, and in a diseased state; and in process of time, the cornea sloughs, an opening is formed, and a discharge of a ropy mucus first takes place.

The fungus does not always protrude through the cornea, but sometimes through the sclerotic, and then it has a purple livid hue, and is covered by the conjunctiva. As it increases in size, it assumes a dark red colour, its surface is unequal and irregular; it bleeds at the slightest touch; the parts slough, and then there is a fetid sanious discharge.

49. During the progress of fungus hæmatodes of the eye, the health becomes affected, the countenance puts on a sallow hue, and the patient wastes in flesh.

The disease is accompanied, and generally preceded, by disorder of the digestive organs; the appetite is impaired, and there are present all the other marks of derangement of the general health. When the strength and health are broken up, the disease very soon comes to a termination. The close of the disease is preceded by hectic fever; as is that of most complaints from which the general health has suffered much during their progress. In fungus of the eye, the rest is completely detroyed, there is an affection of the nervous system; and in children, convulsions come on, which terminate their existence.

50. *Treatment:*—The only remedy in this disease, is the extirpation of the eye, and this in the early stage, before there is a disposition in the constitution to reproduce the disease.

CANCER OF THE EYE.

51. By cancer of the eye is meant, not cancer of the globe of the eye, for it rarely or ever commences in it; but it begins in the appendages and conjunctiva, and then extends to the globe of the eye.

Cancer of the eye at the onset, resembles a warty tumour, with an ulcer on its surface, which has exactly the same appearance as ulcers in other parts of

the body; it then extends not only to the globe of the eye, but the palpebral lining, the lachrymal gland, the periosteum of the bones, forming the orbit, and the antrum; in fact, the globe and its appendages become one mass of disease.

52. No good can be expected in the treatment of this complaint, unless the cancer be early removed by the knife. In the progress of the disease, the general health becomes broken up.

EXTIRPATION OF THE EYE.

53. Although this operation appears formidable, and is so to the patient, as it is a most painful one, yet it is not difficult of execution.

The best mode of performing it is as follows:—The patient is to be placed in the sitting posture, or at any rate, with the head elevated, and in order to steady the eye, or shift its position, if necessary, you are to pass a needle, armed with a ligature, through the fore part of the globe of the eye, by which means you can readily steady it, or move it from one side to the other. If the lids are contracted, or the eye-ball is exceedingly large, it will be necessary to divide the outer angle in order to facilitate the operation. An assistant raises the upper lid, and the operator then introduces a double-edged straight knife through the conjunctiva, and divides the cellular membrane as extensively as he can. He next cuts through the oblique muscles; and having done this, he then divides the recti muscles and the optic nerve; to complete this last step of the operation, a curved knife adapted for the purpose, is used, and the globe of the eye is thus easily extracted. It seldom happens that any hemorrhage takes place which may not be stopped by dossils of lint. The lids are to be brought in apposition, a compress of lint is to be applied over the eye; inflammation should be guarded against, and the patient should not be neglected; for although inflammation does not frequently supervene after the operation, yet it sometimes comes on, extends to the membranes of the brain, and proves fatal.

SECTION IV.

DISEASES OF THE APPENDAGES OF THE EYE.

HORDEOLUM OR STYE.

1. One of the most common affections of the eye-lids, is that known by the name of stye or hordeolum, from its resemblance to a barley-corn.

It consists of a small abscess in the lid, and is produced by an obstruction in the follicles of Meibomius; the secretion from the part is altered, becomes inspissated, lodges in the lid, excites irritation, inflammation, and the process of suppuration; lastly, the small abscess breaks, and matter is discharged.

In most instances, the suppuration is confined to a small space, but in others, it puts on the character of a boil, and sloughing of the cellular membrane then takes place.

2. It most frequently happens that hordeolum depends upon something wrong in the system, or derangement of the digestive organs, or impaired functions in some part of the body; and then these states must be attended to, for they produce irritation, and sometimes ulceration of the edges of the eye-lids.

3. It is necessary when styes are attended with inflammation and redness, that cold applications, poultices, and fomentations be applied, as in other inflammations; and when matter is formed, that the abscess should be opened with a lancet.

The best local applications that can be used, are those of a mild stimulating nature, the mercurial ointments, with a little of which the edges of the lid should be besmeared every night at bed-time, the parts being previously washed with tepid water. The unguentum hydrargyri nitratis is the one in common use; but it is in its usual state too stimulating for the eyes, therefore it must be diluted with some simple ointment. Both the red and white precipitate mercurial ointments are used, and the zinc ointment also; in fact, it is not essential what kind is employed if it be mildly stimulating.

If the hordeolum is large and painful from inflammation, you should discharge the matter with the point of the lancet, and afterwards poultice, or bathe the part with a slight astringent wash, according to circumstances.

TRICHIASIS.

4. Trichiasis is that state of the eye-lashes, in which they become altered in growth, and turned inwards on the globe of the eye, irritating the conjunctiva on every motion of the eye.

Chronic ophthalmies of long continuance sometimes bring on this complaint, in consequence of the skin of the eye-lids being kept, for a long time in a state of distention and œdema, terminating in a considerable relaxation of it. Long-continued puriform discharges from the ciliary glands likewise spoil the shape and consistence of the cartilage of the eye-lids, and therefore not unfrequently occasions trichiasis.

5. The treatment of these cases should be both local and constitutional.

The only means, however, that can be relied on for cure, is to pluck away the eye-lashes, by means of forceps rather broad at the points: some benefit may be derived from applying a piece of adhesive plaster to the lid, which is to be fastened to the cheek, so that the eye-lashes may be kept bent outwards.

ENTROPIUM.

6. Entropium, or inversion of the eye-lids, is produced from

ulceration of the tarsi, the cicatrices formed by the healing of lippitudinous ulcers which alter the shape of the lids, so that the eye-lashes are turned inwards, irritate the conjunctiva, and produce a continual state of irritation of the whole organ.

There is a watering of the eye, together with chronic ophthalmia, and in a short time vessels may be seen shooting over the cornea; nebula and ulceration of the cornea supervene, and thus a serious state of irritation of the transparent part of the eye is produced.

7. In the treatment of entropium, nothing will be of any use except cutting away a piece of skin from the affected lid; for when this is done, the edges of the wound are brought together by strips of adhesive plaster; a cicatrix is formed, and the eye-lids are then drawn outwards.

The mode of performing the operation is very simple; you must lift a portion of the skin of the affected lid with a pair of forceps that have towards the point, transverse branches, and which are grooved; with this you lay firm hold of the portion of the lid, and all you have to do is, to take a pair of curved scissors, and cut off the projecting portion, as near to the edge of the lid as you can.

ECTROPIUM.

8. Ectropium, or *eversion* of the lids, happens from ulceration on their edges; an altered and vitiated secretion from the follicles of Meibomius, which produces a redness and an altered state of the conjunctiva; and from cicatrices and contractions of the skin of the lids, which tend to evert them.

This complaint is very distressing to the patient; the eye has not its natural covering; irritation, from extraneous bodies getting into it, is produced, and thus a constant state of chronic ophthalmia is kept up.

9. The plan usually adopted for the relief of this complaint

consists in removing a triangular portion of the lid, just in the same way as the operation for cancer of the lip is performed.

This is done by cutting through a piece of the lid, which is raised by a pair of forceps, so that the base shall be towards the edge of the lid, and the apex below, at the union of the two sides. A suture is applied through the incision, the edges of the wound are brought together; these united, tend to keep the lid in the natural position; and, in fact, the operation, in this way, is often successful.

Where the disease is brought on by a thickened state of the conjunctiva lining the lid, you must remove that portion; if from a cicatrix, it must be divided; but it will be proper to state that this seldom answers, the divided cicatrix re-contracts, and the disease returns.

FISTULA LACHRYMALIS.

10. By this term is understood, all obstructions of the lachrymal passage, preventing the natural flow of the tears and mucus from the eyes to the nose.

11. The most common cause of this complaint, is a closure of one of the puncta, and then there is *epiphora*, or a watering of the eye, together with suffusion of the tears, and the surgeon consequently discovers that one of the puncta is closed.

This puncta must be punctured by a small sharp pin, made of gold or silver, which is to be pushed through it to the lachrymal sac; the obstruction is thus removed, and the epiphora relieved.

12. When the epiphora continues, the eye becomes irritable, a drooping of the lids comes on, and an altered state of the lachrymal sac is produced, so that the original seat of the complaint is in the ductus ad nasum.

The original seat, then, is in the duct leading from the lachrymal sac to the nose, and the tears, instead of finding their way to the nose, flow down the cheek.

13. Fistula lachrymalis may be divided into three stages; first, where there is only simple distention of the lachrymal sac; secondly, where there is inflammation and suppuration of the sac; and lastly, where there is a fistulous opening leading from the sac to the cheek.

14. *First Stage:*—The first symptom in simple distention of the lachrymal sac, which leads the patient to observe any thing amiss with the eye, is, that on reading or exposing it to the wind, there is a watering of the eye.

In a short time, this symptom becomes constant, and then a swelling appears at the inner corner of the eye, arising from the distention of the lachrymal sac, the tears collecting in it. These produce irritation; mucus and purulent matter is secreted; but when the sac protrudes, pressure made on it pushes the tears or mucus either through the puncta, over the face, or down the nose.

15. The complaint sometimes remains in this stage for many years, with only little inconvenience, pressure being occasionally made on the sac to empty it.

Finally, however, from the pressure of the distended sac, and obstruction of the nasal duct continuing, or some accidental cause, irritation is excited, and the second stage produced.

16. *Second Stage:*—Inflammation and suppuration of the lachrymal sac, are attended by a puffiness of the inner corner of the eye, redness of the surrounding skin, which becomes swollen and hard, from the effusion of lymph. Suppuration having commenced in the sac, ulceration comes on, and the matter effects an external opening, by which it is discharged.

Now obstruction, inflammation, and suppuration, do not always take place in the course of the *ductus ad nasum*, from ordinary causes; but the progress of the complaint, when arising from ordinary and from specific causes, will be very different.

17. *Third Stage:*—An opening being thus made from the influence of the second stage, it is rendered permanent or kept open by the flow of pus and tears out of the wound, over the cheek; and thus a fistulous opening is formed from the sac to the cheek.

In this stage of the complaint, the patient is distressed a good deal by frequent returns of inflammation and suppuration of the sac.

18. *Treatment:*—Although various means have been attempted in the cure of this complaint, no plan has yet been laid down that has proved successful; or at least, the benefit to be derived from the means and treatment recommended, is, in most cases, very slight.

19. In many cases little need be done but to evacuate the sac for the purpose of preventing irritation, in those cases where there is simple distention of the sac.

One of the causes of this complaint is a vitiated state of the follicles of Meibomius; when matter is secreted, and the eye-lids are closed together, and irritation is thus produced in the lachrymal sac; in these cases the lids should be washed with tepid water, and besmeared every night at bed-time, with a little of the unguentum hydrargyri nitratis. By this means, and attending to the constitution, and removing irritation as it arises, the patient may remain in that state for years.

20. When the obstruction is completed, the distention considerable, the attacks of inflammation frequent, and suppuration has commenced, another kind of treatment must be adopted. Your object will be to effect a natural passage for the flow of the tears, that is, through the nasal duct, instead of their flowing over the face.

Methods have been proposed by Anel, Mr. Travers, and Mr. Wathen; but the plan laid down by Mr. Ware is the one now generally adopted; it consists in introducing a nail-headed style into the ductus ad nasum, and letting it remain there.

The style should be just large enough to allow of the flow of the tears, by the side of it. If no opening has been made from the repeated inflammation, the mode you will adopt to make one is as follows: you direct the patient to be seated, and then standing behind him, you pass your hand round the patient's head, open the lachrymal sac, and then carry a blunt-pointed bistoury *inwards* and *downwards*, and divide the obstruction: the instrument with which you make the external opening is a phymosis knife. Having done this, you ascertain whether the passage is free, and then introduce a nail-headed style, about an inch and three-eighths long; the head of the style is to lay obliquely on the front of the cheek, and a piece of adhesive plaster spread on black silk to be put over it, which will prevent persons from suspecting that there is any thing wrong in the eye.

The style requires to be removed once a day for the first week, and to be washed; sometimes there is a little irritation produced by its introduction, but in general, there is none, and the comfort the patient experiences is very great; the water ceases to flow over the cheek, the sight becomes stronger, the tendency to inflammation is obviated; and, indeed, so much comfort is experienced that the patient is loth to dispense with the use of the style. The obstruction frequently returns when the style is removed.

21. It sometimes happens that from disease about the bones of the nose, a fistulous opening from the sac to the nose is formed.

If you should operate in such a case, you must introduce a sharp-pointed instrument, either a probe or a trochar, through the fore part of the lachrymal bone into the nose, and the only object which remains is to keep open the perforation by a sponge tent, or nail-headed style; but it becomes rarely necessary to perform this operation.

END OF PART II.

INDEX.

PAGE
Abscesses 26
Absorption 23
Albugo 473
Amaurosis 484
Amputation 244
  Of the Arm 254
    Fingers 248
    Hand 254
    Hip Joint 256
    Leg 251
    Shoulder Joint 255
    Thigh 253
    Toes 249
Ankle Joint, Fractures of 439
Aneurism 79
  Axillary 95
  Brachial 95
  Carotid 94
  Femoral 92
  Pelvic, Gluteal, &c. 89
  Popliteal 90
Aneurism of the Aorta 87
  Heart 86
  Leg and Foot 93
  Scalp 94
Aneurismal Varix 97
Anthrax 54
Ardor Urinæ 268
Areola Tumour 219
Artificial Pupil 502
Ascites 225
Bladder, Irritable 289
  Mucous Disease of 290
  Paralysis of 291
  Stones in 187
Bones, Diseases of 440
  Exfoliation of 447
  Inflammation of 441
  Suppuration in 442
  Syphilis of 334
Brain, Wounds of 69

PAGE
Breast, Diseases of 205
  Adipose Tumour of 217
  Cancer of 208
  Encysted swelling of 205
  Irritable Tumour of 217
  Simple Tumour of 216
Bubo, Sloughing 315
  Sympathetic 296
  Syphilitic 313
Burns and Scalds 450
Carbuncle 54
Caries 444
Carpal Bones, Dislocation of 388
Carpus, Fractures of 429
Castration 248
Cataract 489
  Operations for 494
Chancre 301
  Irritable and Sloughing 305
  In Women 307
Chemosis 457
Chordee 292
Chronic Carbuncle 48
Cicatrization 38
Clap, or Gonorrhœa 267
Clavicle, Dislocations of 375
  Fractures of 421
Compression 64
Concussion 60
Conjunctiva, Fungus of 475
  Granulations of 476
  Simple Chronic Inflam. 456
Cornea, Inflammation of 479
  Ulceration of 480
  Opacity of 473
Couching 494
Dislocations 365
  Compound 370
Dropsy 225
  Peritoneal 225
  Ovarian or Encysted 228

PAGE

- Ectropium 507
- Elbow, Dislocations of . . . 383
- Encanthis 476
- Entropium 506
- Epiphora 508
- Erysipelas 55
- Exfoliation 447
- Exomphalos 133
- Exostosis 448
- Eye, Fungus Hæmatodes of . . 502
    - Cancer of 503
    - Extirpation of 504
- Eye-Lids, Inversion of . . . 506
    - Eversion of 507
- Femur, Dislocations of . . . 396
    - Partial 404
    - Fractures of 429
- Fibula, Fractures of 439
- Fingers, Dislocations of . . . 369
- Fistula in Ano 233
- Fistula Lachrymalis 508
- Fore-Arm, Fractures of . . . 427
- Fractures 408
    - Compound 414
- Fungus Hæmatodes 212
- Gangrene 47
- Glaucoma 489
- Gleet 297
- Gonorrhœa 267
    - In Females 299
- Granulation 31
- Hæmorrhois 258
- Hæmorrhoidal Excrescences . 261
- Hare-Lip 335
- Head, Injuries of 58
- Hemorrhage 174
- Hernia 103
    - Irreducible 104
    - Reducible 104
    - Strangulated 104
    - Congenital 128
    - Crural 131
    - Direct 125
    - Encysted 130
    - Femoral 131
    - Inguinal 116
    - Umbilical 133
    - Ventral 137
- Hernia Humoralis 294
- Hip, Dislocations of 396
    - Scrofulous Disease of . . 353
- Hordeolum or Stye 505
- Hornet, Sting of 266
- Humerus, Dislocations of . . . 377
    - Fractures of 425
- Hydrocele 96
    - Of the Spermatic Cord . . 102

PAGE

- Hydrophobia 263
- Hydrophthalmia 487
- Hypopium 484
- Infants, Purulent Ophthalmia . 466
- Inflammation 8
    - Adhesive 18
    - Chronic 9
    - Common 10
    - Irritable 11
    - Specific 10
- Iritis 452
- Irritation 3
- Jaw, Fractures of 420
- Joints, Scrofulous Diseases of . 351
- Kidney, Calculi in 184
    - Hemorrhage from . . . 291
- Knee-Joint, Compound Disl. of 405
    - Dislocations of 405
- Lacteal Tumour 220
- Lacunæ, Abscesses in . . . 279
- Leg, Fractures of 438
- Leucoma 473
- Lip, Cancer of 338
- Lithotomy 191
    - In the Female 200
- Lock-Jaw 176
- Lower Jaw, Dislocations of . 393
- Lues Venerea 300
- Lumbar Abscess 357
- Male Nipple, Carcinoma of . 218
- Medullary Abscess 444
- Mesenteric Glands, Scrofulous 349
- Metacarpal Bones, Disloc. of . 388
- Mollities Ossium 449
- Mortification 47
- Mouth, Syphilis of 318
- Nasal Polypi 330
- Nebula 472
- Neck, Glands of, Scrofulous . 346
- Necrosis 445
- Nodes 324
- Noli me tangere 44
- Nose, Fractures of 420
    - Syphilis of 320
- Ophthalmia, Acute 456
    - Chronic 458
    - Purulent 463
    - Gonorrhœal 468
    - Strumous 469
- Ophthalmitis 483
- Os Coccygis, Dislocations of . 395
- Paracentesis Abdominis . . . 231
    - Thoracis 233
- Paraphymosis 310
- Patella, Dislocations of . . . 401
    - Fractures of 436
- Perinæum, Abscesses in . . . 280

PAGE
Periostitis 442
Phymosis 308
Piles 258
Pituitary Membrane, Enlarged 333
Poisons 262
  Animal 263
  Morbid 266
Prolapsus Ani 287
Prostate, Affections of 283
  Stones in 204
Proud Flesh 36
Psoas Abscess 357
Psorophthalmy 470
Pterygium 477
Pudendal Discharge 299
Pustules 474
Rachitis or Rickets 359
Rectum, Polypi of 329
Ribs, Dislocations of 375
  Fractures of 423
Scalds and Burns 450
Scalp, Wounds of 75
Scapula, Fractures of 424
Scrofula 341
Scrofulous Affections 346
Skull, Fractures of 65
Sinous Ulceration 41
Sphacelus 48
Spine, Dislocations of 373
  Injuries of 76
Sprains 361
St. Anthony's Fire 55
Staphyloma 481
Sternum, Fractures of 422
Stumps, Treatment of 257
Submaxillary Duct, Calculi in 204
Suppuration 20
Sympathy 8
Syphilis 300
  Remarks on 327
Syphilitic Affections 317
  Eruptions 322
Tapping or Paracentesis 231
Taxis 109
Tendo-Achilles, Lacerated 173
Testicles, Diseases of 236
  Fungoid Diseases of 239
  Hydatids of 236
  Inflammation of 293
  Irritable 242
  Scirrhus of 237
  Simple Chronic Enlargement 241
  Wasting of 295
Tetanus 176
Thigh, Fractures of 429
  Dislocations of 396

PAGE
Thumb, Dislocations of 390
Tibia, Dislocations of 403
  Fractures of 439
Tic Douloureux 339
Toes, Dislocations of 389
Tonsils, Enlarged 334
Trephining 72
Trichiasis 506
Trismus 176
Ulcers 35
  Gangrenous 39
  Inflamed 38
  Indolent 37
  Irritable 40
  Menstrual 43
  Phagedenic 316
  From Varicose Veins 45
  In Joints 46
  Under Nails 41
  Use of 46
Ulceration 23
  Sinous 41
  Superficial 44
Ureter, Calculi in 187
Urethra, Hemorrhage from 293
  Irritable 282
  Sloughing, &c. 311
  Stones in 203
  Strictures of 274
Urinary Calculi 184
Urine, Extravasated 282
  Incontinence of 224
  Retention of 221
Venereal Diseases 267
Vertebral Diseases, Scrofulous 355
Vertebræ, Fractures of 373
Viper, Bite of 265
Warts 312
Wasp, Sting of 266
Whitlow 42
Wrist, Dislocations of 386
  Fractures of 428
Wounds 137
  Contused 143
  Gun-shot 147
  Incised 138
  Lacerated 142
  Poisoned 146
  Punctured 144
Wounds of Arteries 153
  Abdomen 160
  Joints 169
  Tendons 171
  Thorax 163
  Throat 165
  Veins 160

FINIS.

Metcalfe, Printer,
3, Grocers' Hall Court, Poultry, London.